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SOCIETY AND SCIENTIFIC MEDICINE*

GEORGE R. OSBORN, M.D.

TULSA

Members and Friends of the Oklahoma State Medical Association:

All here assembled tonight have an interest in organized medicine—in its trials, its problems and its accomplishments. Your presence bespeaks that interest and does honor to the medical profession of Oklahoma and lends the much appreciated encouragement to me and the other officers of this association as we assume our duties and responsibilities.

From the time that man first realized that man did exist, that he was a man, and sensed life, he has had the instinct, the impulse, the desire to preserve his life. The activities of life gave him pleasure. Anything that threatened his life or limited his activities gave him pain and unhappiness. His first primitive efforts to protect and prolong life was the first practice of medicine. Today the purpose of medical practice is just the same but living today entails many different activities.

Evolution brought man up to where he could think and civilization has kept him at it. When man first sensed his ego, he was a free man but the moment that the realization was born in upon his meagre intellect that he was not alone, that there were others of his kind, his perfect liberty was gone, and society was born. Social responsibilities began to conflict with his individualism.

Millions upon millions of years have passed since that day and so infinitely long has new life been evolving from old, with only the most minute change in each cycle, that what little man today can learn in his three score years and ten empowers him with only a faint conception of what has gone on before and less of what is to come.

Yet, from history and anthropology and deductions from sciences, mankind today struggles to maintain life and to enjoy it, just as the first man did.

The purpose of the primitive medicine man was to serve his fellowman; to heal the sick. He was not a doctor; the title "doctor" was given to the modern medical man when he began to take on apprentices or pupils and teach them to carry on what knowledge he had acquired. The original medicine man's ignorance forced him to rely upon charms, and magic, which he kept secret. If not too many of his patients died and, by his charms, magic, and incantations, he could build up awe and fear in the minds of his ignorant clientele, he was held in reverence and might live to a ripe old age, but on the other hand, if he failed to cure or did not use the right charm, he was not sued for damages, he was decapitated. So we can thank civilization for the commercialism that has evolved from the primitive instinct of possession. It saves our necks.

In ancient times the priest and the physician were one. Today specialization has taken from the priest his medical practice and left the physician very little of his priestliness.

Evolution is slow in making its changes

*President's Address, Annual Meeting, Oklahoma State Medical Association, Enid, April, 1936.

but is constant and unswerving in purpose; *viz*: the continuation of life in any species and the retention of those physical characteristics essential and best adapted to the environment in which each newborn individual of the species finds itself.

Education or civilization is not constant. We know from history that man has attained to a high state of civilization and learning many times and has fallen or forgotten what he had learned.

Scientific medicine today has attained to a higher degree of proficiency than in any period known to man. Hippocrates, history tells us, is credited with having initiated the separation of the practice of medicine from religion, and for starting the scientific practice of medicine. That is, he used his head, studied his patients and their ailments, and reasoned from cause to effect. He proposed a code of ethics which, although over two thousand years have passed, stands today in every land where scientific medicine is practiced as a classic and a constitution for the laws of behavior for medical men.

What would have been the state or condition of civilized man today had Hippocrates never lived or had he failed to plant so fertile seed in the field of man's activities at that particular time? I wonder!

What might have happened is worthless speculation. What did happen is that medicine has a record of accomplishment, romantic in its experiences and real in its achievements; a record that is a glory to civilized man.

Scientific medicine, universally accepted throughout the civilized world, is known as regular medicine, and its votaries as regular practitioners.

We of the regular medical profession are jealous of the basic principles of ethics and science upon which our so called school of practice is founded.

No school of medical practice based upon a doctrine, a single method of therapeutics, or upon a pseudo philosophy; no sect nor cult, has ever accomplished anything of benefit to society. None such irregulars has ever lived as long nor attained any degree of social significance and responsibility comparable with the school of regular medicine. It would be a great boon to scientific medicine if the public could be taught to differentiate the regular from the irregular in the practice of medicine. It would reduce the "high cost of medical care" and give security of public esteem to the regular practitioner, and thus free him from the threat of State Medicine.

Organized medicine in the United States has as one of its activities the dissemination of information regarding both regulars and irregulars in practice as well as the exposure of the quack and of fraudulent remedies. The irregular practice of medicine does not affect the progress of scientific medicine to any extent in but one way. It diverts public support, both economic and moral, which society must contribute to any cause or service which is essential to life and health.

Dr. Lewellys F. Barker, of John Hopkins, some years ago in a discourse upon *The Irregular Practice of Medicine*,[1] defined irregular practice as "practice that deviates from common rules, that departs from the generally followed course or process of a given time," and pointed out that practice that deviated from commonly accepted rules and in so doing was inferior to regular practice was bad but, if superior in results, it was good and gave as an example of the good and noble irregular the practice which deviates from the conventional by using new methods of therapy and diagnosis that are scientifically based. In this day and age the good irregular soon becomes regular.

It is the bad irregular practice which includes the practice of the charlatan and quack that I had in mind as diverting the public support which rightfully belongs to regular scientific medicine.

In spite of the marked advancements made in all phases of scientific medicine and its universal recognition by civilized society, there are problems of serious import to be solved. Problems that involve not alone the present but the future of medicine, and that concern society which medicine serves. Will we solve these problems correctly?

Apropos of the statement just made and the question raised, also that I may waive claim to originality of the ideas suggested

therein, permit me to present from Garrison's History of Medicine a gem of thought attributed to Sir Michael Foster: "For indeed it is one of the lessons of the history of science that each age steps on the shoulders of the ages which have gone before. The value of each age is not its own, but is in part, in large part, a debt to its forerunners. And this age of ours, if, like its predecessors, it can boast of something of which it is proud, would, could it read the future, doubtless find much also of which it would be ashamed."

When our Chief Executive, in his first broadcast after inauguration, said, "I don't know where we're going, but we are on our way," he, I believe, sensed deeply his responsibilities, and was thinking of the complexity of social forces that were his to guide. However, by that statement, he expressed the state of mind of society in general.

Like a hilarious joyrider, the American public had been speeding along, propelled by the power of applied sciences upon a well paved financial roadbed. Suddenly the pavement ended.

It is obvious that the stress of the times has helped to bring the question of the cost of medical care into prominence and that some change will have to be made in the system of rendering service. However, the so-called depression came several years after the work and the report of "The Committee on the Cost of Medical Care." Long before that even, free clinics and propaganda in support of compulsory insurance against sickness, and the formation of societies or lodges employing a member physician to render medical service for a small nominal fee became common. And today we have State Medicine knocking at our door.

Social economics has shown that there are two ways of regulating man's activities. One is by laws justly enforced; the other is by education. That is, training in those virtues which underlie correct behavior. The first method limits personal liberty and initiative, the second gives freedom and develops self-reliance. Hence, that axiom of political economy: "The best governed people are the least governed people."

This being true, we must conclude that a nation of perfect people would need no laws, and to impose laws upon them would weaken their self-reliance and lower their sense of social responsibility. Hence, this cry for State Medicine or laws to control the practice of medicine indicates that the mien or average of individual sense of social responsibility and of self-reliance in the United States has been going down for some time.

As has been stated, or inferred, scientific or regular medicine is an essential unit or part of society, and its individual practitioners must have the same sense of relationship to society in general as any other individual must have. However, he is not accused of lowering his standards of practice. It is acknowledged that the average physician is better trained and better equipped than his predecessors. Vital statistics show that he is lowering the mortality rate for most of man's ailments. He seems to be doing his best. He is rendering more free service to the indigent than ever before. Society is paying more for its other wants, and more for most of its necessities. To reduce the cost of medical care means less service or a decline in quality of service. Organized medicine knows that there is something wrong and various plans for regulating the charges for medical care in proportion to ability to pay are being tried.

No plan can be willingly accepted by the profession which takes from the patient his right to select his physician or directs the kind or amount of service to be rendered. State Medicine and various insurance schemes do that.

I believe it is yet possible to prevent State Medicine from being forced upon the regular medical profession. It is a compliment, however, to regular medicine, that it has been selected to render the service which the advocates of State Medicine propose to control. Regular scientific medicine is not in disrepute, and is not disorganized. Hence, my statement of confidence that State Medicine can be prevented.

Public opinion has been influenced to accept the teachings of organized scientific medicine before, as in the case of public health regulations. It is well within the memory of many here tonight,

when public health laws were considered as infringements on personal liberties and privileges.

Public health work is preventive medicine—one phase of scientific medicine. True, it is largely controlled by the state, but that is as it should be because public health concerns society as a whole, while curative medicine concerns the individual, and his self-reliance should not be weakened nor his individuality taken from him by the state prescribing and paying for his personal treatment.

These things must be taught by organized medicine to the public and by the physician to his patients. The average individual pays little thought to public health matters until an epidemic threatens; nor to his personal health until he has a pain; so it has always been the duty of the medical profession to exercise a sort of parental control over the individual patient and direct measures for the protection of the public health. It means a lot of teaching and our responsibility to society is great. Organized medicine assumed that responsibility in the United States sixty-one years ago. The individual practitioner, like any individual, may err or fail to do his duty but an organization such as the American Medical Association, having for its sole purpose the promotion of scientific medicine, and guided by the ethical principles which have stood the test since the time of Hippocrates without having compromised itself commercially or politically, will not err now; it will continue to function as one of the strongest and mose beneficent social agencies in America.

It is admitted that individual members of the medical profession may err. We must acknowledge in the spirit of fairness that many of them do err. Commercialism or greed has always been a disease of the professions. Organized medicine must cure itself. It is awake to the fact that there are irregulars within its ranks and, by raising the moral and educational standards of medical students, it has reduced the number to some extent.

I think it can be said of recruits to the ranks of regular medicine that they are of a higher type than formerly but there are contaminating influences from outside the profession that lower their morale. In the lean years of establishing a practice, temptations to violate the Hippocratic oath are sometimes overwhelming and they fall.

The quack and cultist and unscientific practitioner, whose only "stock in trade" is advertising in newspapers and by magazine articles, are pernicious and criminal competitors for practice that would otherwise fall to scientific practitioners.

If society recognizes that scientific medicine is right, and it does, then it should demand that those who practice medicine or claim to heal the sick, should have knowledge of the basic sciences of medicine.

Such a demand in the form of a basic science law, and its honest enforcement, could eliminate this racket which is more widespread and pernicious than ever practiced by the so-called underworld. A basic science law would save many lives and prevent untold suffering. It could do no harm to any practitioner who is honest and honorable for, if such a man knew his shortcomings, he would not want to practice. A basic science law would provide a measure of the capabilities of those who propose to practice medicine.

There are many problems to which members of the regular medical profession must give their individual thought and effort to solve and in so doing fulfill their obligations to society at large and to scientific medicine in particular.

Theodore Roosevelt once said: "Every man owes some of his time to the profession to which he belongs."

I have discussed in a somewhat argumentative manner the question of State Medicine and the problem of regulating the practice of medicine by a basic science law because it seems, that among the many questions that concern organized scientific medicine, these are most vital.

The regular medical profession would be negligent of its duty to society if it failed to resist the former or to support the latter. Society, as a whole, will give little attention to either unless its interest is aroused, and it is being aroused by social reformers of questionable judgment, and scheming politicians of questionable motives. Hence, it is the duty of every mem-

ber of the regular medical profession to put forth every effort he can by righteous argument and instruction to counteract this sinister propaganda.

Effective work is already being done by the American Medical Association and its component state and county units.

Let me repeat: Organized medicine is alert. It is cognizant of its problems. It is efficient and diligent in all its departments, extending to every individual physician the latest in scientific knowledge and equipment. Medical education is being improved through better organization, equipment and the curriculum of medical schools. In fact, medical education as carried on by organized medicine never stops, and in its research laboratories, hospitals and clinics, it is constantly learning and teaching new scientific facts and principles.

Could society appreciate just a little the centuries of intense study and the constant devotion to service, and comprehend how man, guided and impelled only by the divine principle that was in him, had brought modern medicine out of mystery; could society but faintly sense the majesty of medicine; would society then demand social regulation of medicine?"

Scientific medicine is "law unto itself."

1. Read before the Mississippi Association, St. Louis, October, 13-15, 1921.

Friendship in the Medical Profession*

LOUIS H. RITZHAUPT, M.D.
GUTHRIE

Two years of intimate connections with the affairs of the Oklahoma State Medical Association have intensified my belief that the medical profession of the State must assume obligations of, and direct things pertaining to, the health of the people. The modernization of thought and plans for social security, public health, hospital and medical insurance, and State Medicine must be directed by those who know the needs of such service. However, this power must not be anticipated with the expectation of ulterior gain or personal advancement, but rather for the welfare of every citizen.

To accomplish this great task it is necessary that the doctors of this State be welded together by some strong cohesive power greater than that of professional fraternalism, yet compatible with it.

There is no family circle so strong, no professional group so well established, no State so firmly founded, as to be beyond the reach of utter destruction from animosities and factions. The medical fraternity should be composed of persons whose actions and lives leave no question as to their honor, equity, and liberality; who are free from greed, violence, and lust for gold; who have the courage of their convictions.

What could be more delightful, more inspiring, than to have not one, but many people, to whom you could turn with the same absolute confidence as to your inner self, knowing that your hopes and ambitions would be welcomed, and that all those involved would advance together for a common good? We follow too much our own desires and devices, too often we leave undone the little kindnesses that mean so much to our fellowmen. Friendship, sincere and abiding, is the greatest power for unity. Truly friendship has been termed the sweetener of life and the saviour of society, and because it is that by which the world is most blessed and receives most good, it ought ever to be chosen by the worthiest persons, those that can do greatest benefit to each other. Other goals of ambition serve for particular ends, riches for luxury, office for reputation, pleasure for entertainment, even

*Read before the General Meeting, Oklahoma State Medical Association, Enid, April 7, 1936.

health for freedom from pain and the full use of body functions. But true friendship, not cemented by mere material advantages, wishes all of these for his neighbor. Genuine friendships are eternal, unchangeable, leading us to life's higher levels of altruism and sacrifice.

A new order of things is inevitable. It marks the progress of the individual, society, the state and the nation. This change should be carefully wrought in an orderly fashion by men who are capable of analyzing the past and looking to the future. If the change be not brought about in this manner, then strife, contention, persecution, and bloodshed will hold sway, and retrogression, not progress, will result.

Heroic efforts are being made along many lines to stabilize and perpetuate the lives and rights of the people. The government is spending vast sums of money in the restoration and conservation of land as well as to meet the economic needs of the farmer, in supplying cattle, sheep, and horses; also seed, feed and grain. Little consideration is given, however, to the health or the rehabilitation of the men, women and children who constitute the agricultural population. So far all the money spent by the government for public health has been to prevent disease, not to cure it.

Every hamlet has its jail, every city and town its municipal building, every county its courthouse, and every state has a number of penal institutions. Enormous sums of money were spent in their erection and vastly more is needed for their maintenance. The principal use of these places is to discourage crime, to apprehend and punish criminals. Records show that in one year over one-third million people were arrested, and the census of state and federal prisons was over two hundred thousand.

There are in the United States over six thousand registered hospitals with a capacity of more than a million beds which administered to over seven million patients. The greater portion of these hospitals are owned and operated by corporations, religious organizations, or individuals. Only a few operate at a profit, but all serve the public.

With seven million people treated in hospitals, twice as many were cared for in their homes, many of whom should have had the advantages of hospital care.

In view of this comparison and with the knowledge that hospitals, jails and public buildings serve humanity in divergent ways, can you correlate the fact that one is erected and maintained wholly by taxation, while the other burden, that of caring for the very lives of our citizens, is placed on those who are sick or borne in part by charitable organizations?

Health is a human birthright! The nation is responsible for its people. The government, federal, state and local, must meet this problem. Suitable subsidy must be granted and hospitals adequately and conveniently located so that urban and rural residents may be served. This will assure a modern workshop for efficient and competent doctors who can be chosen by the individual who is sick, and who can be relied upon to serve their fellowmen.

I exhort the medical profession of this state and nation to advance a plan which would provide suitable hospitalization for all when needed, and especially attract the modern doctor when he graduates from the medical colleges, into the rural districts. Our duty is not alone to those in cities—we must serve everywhere—we must be a friend to all classes.

"It is my joy in life to find
At every turning of the road
The strong arms of a comrade kind
To help me onward with my load;
And, since I have no gold to give,
And love alone must make amends,
My only prayer is, while I live—
God make me worthy of my
friends."

I pass on to those who follow as presiding officers of the Oklahoma State Medical Association the tasks that Doctor LeRoy Long gave me; I have not completed them—the tasks are eternal—but each year brings the ideal condition nearer; each year, new tasks are added.

ACHIEVEMENTS OF UROLOGY*

ALFRED R. SUGG, M.D.
ADA

The officers of the urological section wish to acknowledge with thanks, not only the contributions of those who appeared on our program, but also the fine cooperation we received from the large percentage of urologists over the state who helped to plan the meeting and who have thus had a share in whatever success has been achieved.

I am pleased to have had this year, for the first time, a separate section on urology, as I think most of you are. There is no disposition on our part to "high tone" any other section of our association but we are a well differentiated group and this separate section emphasizes the fact that we are out of our swaddling clothes as a specialty. In fact, it serves notice to organized medicine that we are grown up and can stand on our own feet and can move ahead under our own steam.

Urology, as a specialty, has, in the last few years, acquired a new dignity. Not so many years ago, a urologist was little more than one who treated venereal disease and his attitude and practice was such as to merit little more than the scorn and ridicule to which he was subjected by other established divisions of the Asclepian art. Modestly, let me say that we have merited this new dignity. We have carved out for ourselves a place in the sun by the zeal and earnestness with which we have gone about our task. Urology has not progressed to its present high standing by invitation, nor has it won the golden spurs of achievement without a struggle. It has made a niche for itself in the truly acceptable way by making itself indispensable. There is scarcely a diagnostician today, either in medicine or surgery, sufficiently intrepid to risk an opinion on a multitude of lesions, without first seeking out the wealth of information that can be furnished by the urologist. Furthermore, we can point with pride to as many, if not to more, outstanding advances in our field in recent years as anyone. The whole field is relatively new but progress in our armamentarium is so rapid that scarcely do we get outfitted and ready to go than we find our equipment has gone the way of a lady's last season hat. It is out-moded and a newer and better gadget is on the market. Nor is this rapid change merely the light-headed flitting from pillar to post just to be new. It represents a continuous chain of progress and refinement second to none in the realm of medicine.

After all, this recitation of achievement of which we may justly be proud, is not in reality what *we* have done but rather what *they* have done. I refer to the pioneers whose vision and industry and tenacity have paved the way to success and have laid at our door the fruits of years of research and profitless toil, that we may thus better be able to carry on. Where would we be but for the work of Caulk, Young, McCarthy, Davis, Braasch and Lewis—to mention only a few—and I pause to pay tribute to these and others who have added, if only a mite, to the sum total of effective means and measures that we are privileged to employ in our daily work.

I have never made an invention, nor have I even attempted the rather popular alternative of offering a modification. I have never synthesized a new drug nor originated a new technique, and I expect the same could be said for most, if not for all, of my audience. Then, what claims have I (or you who may be measured by the same rod), to share in the glory of urological achievement which is everywhere admitted? Granting that none of us have yet or ever shall originate either an idea or an implement, there is yet a very definite way by which each of us may participate. While I lay no claim to having done anything first (except perhaps to institute a few colossal blunders) there is yet some merit to following intelligently

*Chairman's Address, Urological Section, Annual Meeting, Oklahoma State Medical Association, Enid, April, 1936.

a meritorious leader. If you and I cannot break into the headlines with some new discovery, we can at least discriminate between hokum and horse-sense. We can hold on to accepted and time tried principles and turn our backs on flimsy theories that skyrocket into prominence today and wither tomorrow, as the mushrooms that they really are. We can at least cultivate the scientific as opposed to empirical method of approach to our problems. We can demand of ourselves a critical attitude to all new fledged ideas that are continually inundating the sea of medical literature and hedge ourselves about by every device known to man to prevent us from jumping at conclusions and convicting the prisoner before all the evidence is in, and can educate ourselves to the point where the only drug or measure which we will inflict on a long-suffering public, is one that looks favorable after a long series of controlled experiments in competent hands. Furthermore, we can refrain from bringing discredit upon some worthy procedure by half-hearted application and that without discrimination. We will be entitled to some of the credit for progress when we decide that post-graduate work is a necessity and that a well planned course at a reputable medical center is far more praiseworthy and practical than to be able to dissertate at length on what some detail man had to say, or to quote at length from the prejudiced pamphlets so generously furnished by the pharmaceutical houses.

While I am sure that you frequently despair at the task, nevertheless, you owe it to yourselves and to the profession, to continue to educate your clientele in the antidotes for quackery. What with six radio programs blaring into their ears in one hour, programs designed to entertain the young, beguile and scare the middle aged, and to play on the fancy of the low spirited senile; and what with a large portion of our druggists encouraging self-medication; and what (sad to relate) with some of our brethren neglecting to use such common items as the x-ray, microscope or cystoscope; and what with puny, pussy-footing, pusillanimous politicians playing into the hands of the credulous with spineless attempts to placate an organized, selfish minority, there would seem to be no need for you to retire for the want of a world to conquer. And if any of you just run entirely out of something to do, you might busy yourselves with the little job of strangling this octopus of socialized medicine that is slowly entwining his slimy tentacles about our very throats.

I would love to see a better organization of the urologists of this state; more, also, of our number affiliated with the regional and national organizations and to have each of you declare himself a delegate of goodwill and fair practice, that our section may grow in grace, numbers and *esprit de corps*.

Tularemia: Review of Literature of Cases Contracted by Ingestion of Rabbit and Report of Additional Cases With a Necropsy

Although Harold L. Amoss and Douglas H. Sprunt, Durham, N. C. (Journal A. M. A., March 28, 1936), cannot prove that the rabbit eaten by two persons whose cases they report had tularemia, it seems likely that the rabbit was weak at the time it was killed, as the hunters were probably too intoxicated to shoot a well rabbit. It is also likely that the animal was not thoroughly cooked, and Francis has shown that the organisms may withstand some cooking and still be infective. The mode of entry of the organism may have been through the intact skin, but it seems likely that the alimentary canal was the mode of entry. This is borne out by the fact that a lymph node from the hilus of the liver as well as the liver itself showed definite evidence of tularemic infection. A diagnosis of systemic infection with tularemia was made in both cases because of the high fever, delirium and typhoidal state without physical signs. Such a diagnosis led to the agglutination tests and to more detailed histories. The agglutination test in case one and the history of the ingestion of rabbit meat appear to confirm the tentative diagnosis. Of especial interest is the fact that in the two cases of strikingly similar courses only one showed positive agglutination to Bacterium tularense. This is not an unusual observation in typhoid. No definite ulceration was found in the intestine as in the case of Beck and Merkel. It does not, however, seem unlikely that the tularemia organisms can pass through the intact intestinal mucosa, as they have the ability to pass through the skin.

Summer Diarrhea in Babies

Casec (Calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the twenty-four hour formula and replaced with eight level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually eliminated. Three to six teaspoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

Surgery—A Fine Art or a Technique?*

A. S. Risser, M.D.
BLACKWELL

Generalizations are ever more easily substantiated than specific statements. In fact, if generalizations are sufficiently general they require no substantiation. It is always possible to express opinions—if one has them—but facts sometimes need to be proved—at least in the realm of science—and, medicine and surgery are supposed to be branches of science. To most of us, our own personal activities and accomplishments bulk but small in the great fields of surgery. So it may be more encouraging—and perhaps more stimulating to others to analyze some of the accomplishments and achievements of surgery in general than to recount to others our own personal failures, or even our all too few partial successes. Hence, for the Chairman's Address, the writer has chosen the rather intangible and too inclusive subject of Surgery and Surgeons in general. If in his "random" remarks, he should succeed in "scoring a shot" occasionally, he may be pardoned, because like the prophet of old, he is "very jealous" for the Jehovah of Surgery, who is incarnate in the combination of a truly scientific mind and a good conscience. And further, if in this brief survey of the broad field of our surgical domain, past, present and possible future, the writer finds it necessary to express certain mild criticisms, nevertheless, he desires not to seem so narrow, that all of his remarks may be construed as strictures on all surgery or on all surgeons.

From the pre-antiseptic and pre-anesthetic days of surgery, when the patient sustained the terrible ordeal of the operation only by being held upon the table by the brute strength of retaining fetters or human hands, when as Sir James Simpson said, "operative patients were more in danger of death than English soldiers on the field of Waterloo," because of inevitable post-operative infection; when operations were limited almost to amputation with the catlin knife and the saw—when speed and manual dexterity and stout-heartedness were the main qualifications demanded of the surgeon—from those days to the present is a far cry. Time is not sufficient to name the men and the measures, the discoveries, the volumes of the studies of human miseries, which have contributed to place surgery in its present high rank, the art most beneficent to all mankind, the most highly developed of all sciences. It would require more than an "eleventh chapter of Hebrews," merely to list the names of the pioneers of surgical faith and their discoveries. Now, no part of the human body is immune from surgical approach. In turn, abdomen, chest and cranial cavity have opened their secrets to the inquiring minds and eyes of the surgeons. Many of the diseases to which these organs are subject have proven amenable to the skill of the surgeon. And the end is not yet. Ours is not a static science.

The achievements of the past may confidently be taken as evidence that vastly greater discoveries and advancements will yet be made in all lines of surgical practice. New operations and better methods of operation will be discovered and the sphere of operability extended; on the other hand, certain "old things" in the way of operation will be "put away."

Chloroform and ether, once a boon to human suffering, are being replaced by newer anaesthetics. Further improvement in anaesthesia and anaesthetic methods is certain to be made. Local anaesthesia has removed from many operations the chief risk. Also it has taught us the advantage of careful and gentle manipulation of the body tissues. The use of spinal anaesthesia has been greatly extended. While it is comparatively safe within the lower levels of the cord, it carries an appreciable risk as anaesthesia is extended upward to the higher levels. The recent discoveries of

*Chairman's Address, Surgical Section, Annual Meeting, Oklahoma State Medical Association, Enid, April 8, 1936.

avertin, sodium amytal, ethylene and cyclopropane are but the guarantee that other and perhaps more efficient and possibly safer means of anaesthesia will yet be devised.

The trend of the new surgery is to simpler, safer operative methods. For example, the surgical treatment of peptic ulcer leaves much to be desired. Comparatively few ulcer cases demand operative interference. In many cases the word "interference" is a specific word, denoting the lack of necessity for operation, and the conscientious surgeon will exhaust every available dietetic and medical aid before resorting to operative measures. There is always the possibility that the real cause of ulcer formation may yet be discovered, that some preventive or curative drug or vaccine may be elaborated, thus making ulcer surgery a rare necessity. The roentgen ray and radium have done much to limit the field of operative cure in cancer and many other conditions.

A further example of the trend to simpler surgery is the present treatment of varicose veins and ulcers. The former extensive dissections, time-consuming, bloody, hospitalizing and even fatal operations have been superseded by "office treatment," not detaining from business, practically safe and comparatively painless. In like manner it seems more than possible that other conditions such as hydrocele, spermatocele, hemorrhoids, possibly even undescended testicles and hernia may be made amenable to non-surgical and yet scientific methods.

In the light of what has already been accomplished, we are justified in our faith that still further progress will be made in this direction. This is not to say that the surgery of the future can be done by any mechanistically inclined adventurer. True surgery has always been more than mere manual dexterity. Increasingly, the surgeon of the future must perfect himself in the knowledge and the details of service which will be ever more exacting of intelligence, honesty and skill than it is at present. Witness the wealth of knowledge which must be that of the brain and neuro-surgeon, the infinite care and meticulous concern which must be exercised in the invasion of this sacred precinct.

Surgery is far more than merely a profession or a trade, more even than merely a science of the highest type. The practice of surgery is also an art, an art of supreme importance, since it is deeply concerned with human lives and human personalities. Often do we find that with diseased bodies are associated disturbed minds and distressed souls—and they are integrated and interdependent. They can not be treated separately. In this respect we need to readopt the principles of Galen. As we have been taught to avoid rough handling of the tissues during an operation, so we need to learn understanding and consideration for the feelings, the psyche, the whole body of emotions of the patient. Too often this duty of the surgeon has been neglected. If "to operate, or not to operate," is the question, the answer should depend on whether the good effects of the proposed operation will out-weigh the evil. It would be well if the surgeons were to recognize that, theoretically, at least, every operation imposes an added burden upon the physiologic processes of the body mechanism, directly or through some of the various sympathetic reflexes.

The decision to operate in a given case can be rightly made only after an intelligent survey of all the findings; and the time and type of operation decided only with the aid of what may be called a prophetic fore-knowledge of the ultimate, beneficial results to the total welfare of the patient. Aiding us in the decision as to the wisdom of operation are the study and understanding of the interrelations of organs as parts of one organism—as per Galen—and determination to do reconstructive or rehabilitative surgery, rather than merely ablative operations.

If surgery is to continue an enlarging science, dynamic not static, surgeons must continue to display an eternal interest in phenomena and their significance, with the high intent of converting facts into healing knowledge. Not only the observation of phenomena but the recording of them, and what may be termed a speculative mind, have ever been surgery's mode of progress. Always the eternal question "why" needs to be answered. For centuries surgeons knew that milkmaids who had had cowpox were immune to smallpox. But it was left for Jenner, to the lasting

benefit of mankind, to establish the fact that cowpox and human pox were identical and preventable. Thus does the exercise of the power of deduction enlarge our store of surgical knowledge. The question, "What is Truth?" must be asked, not in the spirit of Pilate, who offered it as an excuse for a hopeless attitude in its pursuit, and as a refusal of personal responsibility in its application; but in the mind of the surgeon it must be a constructive question: How may Truth be utilized in the domain of surgery?

For example, the pathology present in a given case does not tell the whole story. Abnormal anatomy and dysfunction are only the results of antecedent causes. An intelligent query as to the why and wherefore should lead us back to the initial lesions, and help us to interpret the symptoms as significant not only for a particular organ but for the organism as a whole. In fact, the advancement of surgery will be measured by the degree to which we are able to anticipate the development of pathological conditions and prevent their eventuality in disease and possible death..

No man can lay claim to the title of surgeon who does not make a careful history of his cases; who does not keep a record of symptoms, findings and the results of treatment. "O.K." and "N.G." are not scientific data. They are merely financial estimates, and have no place in the records of real surgeons. The executive committee of this section has had only two requests to read papers or report cases at this meeting. Surely, in the professional experience of some of our more than a thousand physicians, there should have occurred more cases of interest worthy of detailed study and report.

Many of our greatest advances in surgery have come from the careful observation and scientific work of men removed from great medical centers. The writer would offer a word of encouragement, especially to his younger and perhaps more scientifically trained colleagues, to make use of their opportunities by carefully observing and recording data, not only to increase their own skill and efficiency, but to make some worthy contribution to the science of surgery as well.

In the light of the almost miraculous results of scientific study of the patient, combined with exercise of common honesty and a good conscience in deciding the necessity and proper manner of an operation, the pseudo-surgeon for whom every pain between the chin and the knees, spells "appendicitis," and who removes tubes and ovaries by the score, will have increasingly more difficulty in continuing such unwarranted surgery. The public, even now, is beginning to recognize the difference between the real surgeon and the mere operator.

Not more operations, but better surgery must be our goal. Not more frequent surgery but more intelligent operations; not so many mutilating operations, but more rehabilitative surgery, better technique, gentler, more respectful handling of tissues, seeing those tissues and organs in their biochemical functions and relations with all the other organs in the organism as a whole. Galen was right. He insisted that the whole is even more than the sum of all its parts. They are alive and living in relation with each other and with their environment. We need to readopt the truth of Galen's principles. This broad conception might provide some otherwise rampant surgeon's intelligence enough and surgical conscience sufficent to appreciate the virtue of a "masterly inactivity"—to recognize the contra-indication and to withhold the knife until an honest effort has been made to utilize available non-operative measures.

The well informed and honest surgeon will admit that there are in our midst thousands of women needlessly unsexed, by removal of one or other of their pelvic organs. These unfortunates are unsexed psychically as well as genitally. Their whole mental attitude and outlook is altered and they go through life, incurable psychopaths, haunting the offices of one physician after another, in search of a cure that is no longer possible. If they would haunt only the surgeons responsible for their plight, the punishment might produce a reformation. For to most normal women, the ovary is worth far more than is her paltry hundred dollars to the surgeon. And, it may yet be established that the uterus also provides an endocrine substance, which is of value to the female economy, especially in the early years.

And speaking on the subject of the psychic element in surgery the writer is of the opinion that there is much evidence that we surgeons have not yet learned to utilize certain mental, psychic and spiritual influences which are, or should be available to aid us in the art of reconstructive surgery.

Surely, there are untapped resources in the unexplored realm of the mind and soul, greater than we have been wise enough or willing enough to admit, which could be of immense aid in bolstering up the physical mechanism.

Man is a religious being—even though that fact is not yet evident to some of our fraternity—and the wise surgeon will take cognizance of the comfort and balance and rehabilitative power which religious faith can furnish. But between the pseudo-scientific surgeon, professing to utilize the psychic forces for the guidance of his patient back to health—by the way of surgery—and the conscientious and truly scientific user of spiritual power, there is a great gulf fixed; and only the knowledge that psyche and soma are one integrated whole, and a high conception on the part of the surgeon of his share in the reconstructive and rehabilitative process can bridge that gulf.

To paraphrase Mr. Dooley's wise criticism: if Christian scientists were more scientific and surgeons were more Christian, the application of the art of surgery, if not the "science" would benefit vastly more members of humanity.

In the sphere of obstetric surgery, however, the indications for surgical measures are certain to be extended. An elective Caesarean section will be accepted as a far more conservative operation than a high forceps delivery or even a difficult low forceps. Statistics are adduced to prove that there are in this country one hundred thousand diabetic women of child-bearing age. For these women pregnancy and labor spell a vastly increased risk to both mother and child. For such women, speedy and safest possible delivery of the child, often abnormally large, is most essential. In a fairly large percentage of these cases, delivery by means of Caesarean section with selective anesthesia offers the safest method. But, the extension of the scope of Caesarean section will be justified only when, and if, the accoucheur, the obstetrician and family physician have learned to keep their always potentially contaminated hands out of the germ-welcoming birth passages. Progress in this direction is predicated on the elimination of meddlesome midwifery. Incidentally, it might be mentioned in passing that our mortality and morbidity rate in obstetric work is almost criminal, so that here, again, opens a large field for cultivation, not only by the surgeon, but we might add by the general practitioner.

In closing this brief and sketchy outline of surgery as an art, may I recapitulate as it were, by giving my estimate of what I believe to be necessary characteristics of even the "average" surgeon of the future. He will be not merely a brilliant operator, skillful only in manipulative technique, in sleight of hand performance, but he must be a careful clinician and an efficient diagnostician; gifted in eliciting a correct history and in the evaluation and correlation of signs and symptoms. He must be one whose chief concern is not alone to operate, but to benefit the patient. The surgeon, I foresee, will desire to respect both the body and the whole ego of his patient, and to return them, if possible, to a life of comfort and of usefulness. But also he will know his own limitations, and for the welfare of the patient, will cooperate with or give place to another colleague more skilled. He will be wise enough to admit the infinite wisdom of the Supreme Designer and Creator of the body of Man, and content when dealing with that body, to follow as best he can God's plan, because he respects Life and the God who gave it.

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Lower Lobe Tuberculosis: Review

Charles E. Hamilton and Harry Fredd, Brooklyn (Journal A. M. A., August 10, 1935), discuss the incidence, diagnosis, mode of development, symptoms and prognosis of lower lobe tuberculosis and report ten cases of the disease. They found no involvement of upper lobes in any of the patients. The history and the clinical course of the disease are the most valuable aids to a tentative diagnosis. The authors conclude that negative sputum examinations do not rule out lower lobe tuberculosis.

Further Observations on Vitamin A Deficiency as Shown by Studies With the Visual Photometer and Clinically*

IRA O. PARK, M.D.
MUSKOGEE

Clinical observations, as well as tests made with the visual photometer, prove conclusively that vitamin A must be considered one of the most essential factors in nutrition. It should be possible to describe certain characteristic symptoms and signs that would form a definite clinical entity so that vitamin A deficiency could be readily recognized clinically. Vitamin D deficiency in early years causes the definite bony changes (rickets) which persist in certain instances throughout life. It would appear that there must be also some definite clinical evidence of vitamin A. deficiency.

During the past year I have carefully studied over three hundred individuals in all walks of life, and ranging in age from infancy to seventy years. The majority of these subjects proved to be deficient in vitamin A as shown by tests made with the visual photometer according to the technic of Jeans and Zentmire.[1]

Clinically, one or more of the following symptoms have been noted in individuals shown by tests with the visual photometer to be deficient in vitamin A.

1. General lack of vim and vigor.
2. Fatigue out of proportion to the difficulty of the task or the age of the individual.
3. Lack luster of the cornea.
4. Nervous irritability and loss of sleep.
5. Dryness of the hair and roughening of the skin.
6. Ptosis of the eyelids.
7. Visual difficulties similar to those which are characteristic of night blindness.

Clinical observations suggest that the asthenic individual (child or adult) presents a picture closely resembling that of vitamin A deficiency. Such individuals are found in all classes and races. The deficiency may be due to lack of proper food, perverted appetite, or inability to absorb and utilize vitamin A from the normal food intake.

Different degrees or varieties of deficiency have been demonstrated. The far advanced state of deficiency with xeropthalmia is readily and generally recognized. Not infrequently an acute state of deficiency, brought about either by lack of ingestion of the proper amount of the vitamin or by an infection. These types of deficiency are readily relieved by large doses of vitamin A concentrate.

There is a milder degree of deficiency characterized as the "twilight zone" of vitamin lack with borderline states described by Salter.[2] The usual causative factor in these instances is an impoverished diet, due either to economic limitations, or, especially in women, to the current fad for weight reduction. A chronic state of vitamin A deficiency may be caused by either a prolonged lack of proper food or the inability to absorb vitamin A from the food supply due to systemic disease or infection, altered liver function or inability to utilize fats. As will be shown later in the paper, the individuals in my series showing evidence of a chronic deficiency were of the asthenic type as a rule and did not respond promptly to large doses of vitamin A concentrate in the form of carotene in oil. Large doses of carotene over a period of several months were required to produce effect, giving evidence of the fact that a prolonged or chronic deficiency of vitamin A requires far above the normal amount of vitamin A over a long period of time in order to rebuild the

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damage done to tissue and make possible utilization and storage of vitamin A.

In my most recent experiments, seventy-eight (or eighty-three per cent) of the ninety-four subjects tested with the visual photometer showed varying degrees of vitamin A deficiency. A large percent of the group were inmates of an orphanage for Indian children; all were on the same diet and lived under the same conditions. Included in the group also were patients (referred by physicians) in whom vitamin A deficiency was suspected or had been diagnosed.

CASE No.	AGE—YEARS	Readings When Admitted				INTERVAL—DAYS	Readings When Discharged				REMARKS
		Initial R'ding		10 Min. R'ding			Initial R'ding		10 Min. R'ding		
		Wedge Setting	Diaphragm Setting	Wedge Setting	Diaphragm Setting		Wedge Setting	Diaphragm Setting	Wedge Setting	Diaphragm Setting	
4	19	3	12	4	12	46	4	20	5	8	15 M. t.i.d.
5	20	2	8	4	20	55	3	20	7	12	15 M. t.i.d.
6	33	3	6	3	6	145	3	12	5	20	15 M. t.i.d.
12	40	2	20	4	12	11	4	20	5	18	25 M. t.i.d.
13	10	1	20	1	20	55	1	20	2	10	15 M. t.i.d.
15	7	1	20	1	10	55	2	20	4	12	10 M. t.i.d.
19	15	2	20	2	10	37	2	20	4	12	20 M. t.i.d.
24	50	3	20	3	20	39	3	20	4	20	20 M. t.i.d.
27	9	1	20	2	20	56	2	20	5	20	15 M. t.i.d.
29	9	0	20	3	20	48	0	20	3	12	15 M. t.i.d.
30	20	3	20	4	8	14	3	20	7	20	15 M. t.i.d.
35	18	2	20	5	20	17	4	20	6	20	25 M. t.i.d.
36	34	3	12	3	18	44	1	8	4	14	20 M. t.i.d.
38	16	1	8	2	12	27	2	10	6	20	15 M. t.i.d.
48	27	3	20	5	20	33	4	20	7	8	15 M. t.i.d.
49	8	4	12	6	20	33	4	12	8	16	15 M. t.i.d.
53	11	4	20	5	8	53	4	12	8	20	10 M. t.i.d.
62	20	3	20	4	12	33	4	10	7	12	25 M. t.i.d.
66	20	3	12	4	6	37	4	12	7	20	15 M. t.i.d.
67	19	3	6	4	8	22	4	12	8	18	15 M. t.i.d.
70	28	2	8	3	8	84	3	20	6	12	25 M. t.i.d.
77	25	3	10	3	12	61	4	20	5	18	15 M. t.i.d.
81	40	3	8	4	20	18	3	20	5	20	20 M. t.i.d.
82	18	2	15	3	20	18	3	12	6	20	15 M. t.i.d.
86	18	2	14	3	10	46	3	18	6	16	15 M. t.i.d.
87	6	2	18	4	16	20	3	10	5	10	10 M. t.i.d.
91	20	3	14	5	12	18	5	20	8	20	10 M. t.i.d.
92	32	2	20	2	8	49	2	20	3	12	15 M. t.i.d.
93	42	2	20	2	6	54	2	20	5	20	20 M. t.i.d.
37	15	1	20	4	13	19	1	20	4	20	10 M. t.i.d.
57	44	3	20	3	10	16	3	10	3	10	25 M. t.i.d.

The above chart shows the results of photometric examinations in thirty-one cases selected from the total number studied. These cases were selected to show briefly, varying ages, and different periods of time cases were observed. The resulting improvement in the majority demonstrated that the regeneration of visual purple is increased by the addition of carotene to the diet.

The accompanying chart shows the results of photometric examinations in thirty-one cases selected from ninety-four cases studied in this report. The numerals under the date heading refer to cases and the dosage given is that of carotene in oil.*

As in other studies, the majority of the subjects who were found deficient in vitamin A by the use of the visual photometer, when given carotene in oil showed improvement in the regeneration of the visual purple.

Rhinehart[3] has suggested the possibility that there may be an embryoligic basis (according to whether the origin is ectodermal, entodermal or mesodermal) which determines the relation of the tissues to vitamin A. According to this theory, tissues and structures arising from the same germ layer should be influenced to the same degree by the presence or absence of vitamin A.

With this theory in mind we find that the retina and cornea are especially rich in vitamin A and that their health and function is governed largely by the presence of this vitamin. These structures arise from the ectoderm, also of ectodermal origin are: (1) The epidermis and its derivatives (hair, nails, sweat glands, lens of eye). (2) The epithelial lining of buccal, nasal and a part of the pharyngeal cavities; the enamel of the teeth; the salivary glands. (3) The epithelial lining of the anal canal, the vestibule, and a portion of the urethra in the male, with associated glands. (4) The anterior lobe of the hypophysis; the paraganglia; the smooth muscle of the iris.

In line with this theory is the fact that vitamin A deficiency frequently causes roughening of the skin and dryness and falling of the hair. Rats made deficient in vitamin A show changes similar to the spinal cord lesions found in pernicious anemia. With this in mind it would appear that vitamin A is essential to the health of the entire nervous system and that fur-

*Furnished through the courtesy of the S. M. A. Corporation, Cleveland, Ohio.

ther study should be given to this feature.

It is further noted that enamel organ arises from the ectoderm. This fact suggests the idea that a visual photometric study of mothers a considerable period before gestation and during pregnancy, correlated with an observation of the teeth of offspring of known vitamin A deficient and normal mothers might contribute to the knowledge of the etiology of dental caries.

It appears that a healthy state of the epithelium of the uro-genital tract (mesodermal in origin) is influenced by the normal amount of vitamin A in the system. If this is true it may well be that other tissues of mesodermal origin (smooth muscle, connective tissue, blood, bone marrow, endothelium of blood vessels and lymphatics, lymphoid organs and suprarenal cortex) are similarly affected. As will be shown later in this paper, it appears rather definite that the blood and bone marrow are affected. In a large number of patients given large doses of carotene in oil over a considerable period of time an increased vigor and ability to stand strain was noted. From this it would appear possible that the suprarenal cortex is stimulated by an ample supply of vitamin A.

The following is a review of the literature, correlated with our clinical observations on vitamin A:

THE EYE

Xeropthalmia and night blindness first served to direct attention to vitamin A deficiency. The health of at least a part of the ocular tissues is largely governed by the presence of normal amount of vitamin A or carotene.

Krause[4] has recently reviewed the literature on the biochemistry of the eye. Referring to the growth of the eye he says: "With a rachitic or low protein diet, the eyeballs are above the normal weight and the external orbital glands are markedly subnormal. Therefore, the nutritional deficiencies permit some of the external ocular bulb to continue growth in a similar manner to that of the central nervous system."

The corneal epithelium is evidently influenced by the action of vitamin A. Krause states, "A certain form of keratomalacia or xerophthalmia arises from the lack of fat-soluble vitamin A in the diet. A part of the corneal dystrophy is perhaps related to the lacrimal and the conjunctival secretion. According to Jaensch, it is doubtful whether only the cholesterol and fatty metabolism of the cornea is affected. Crystals of cholesterol may be formed in the cornea under a degenerated and vacuolated epithelium in certain types of keratomalacia."

In our observation we found that there was a "lack luster" of the cornea in a great many of the cases found markedly vitamin A deficient.

Krause states that: "The iris is a composite tissue consisting of endothelium, pigmented epithelium, blood vessels, muscle, connective tissue and an internal lining membrane. In some birds and reptiles the iris is yellow or red from the color of the chromolipids in the oil droplets in the anterior cell. Although the nature of these colored oils in the iris is unknown they probably are the same chemically as those in the retina." These facts would suggest that vitamin A plays a part in the health of the iris and its function, as vitamin A or carotene is found under the same circumstances in the retina.

In studying vitamin A deficiency I have used a Birsch-Hirschfelt photometer, after the technic of Jeans and Zentmire.[1] Jeans has shown that the test for vitamin A deficiency employing the visual photometer is actually the measurement of the degree of night blindness.

In the retina are the small rods which are sensitive only to light and darkness. Around these rods is deposited visual purple, a substance which is very sensitive to light and disappears entirely when it is exposed to very bright lights for any great period of time. After sufficient time has elapsed this substance is rebuilt by metabolic processes provided that the proper elements are present. According to Krause, "Faulty regeneration of visual purple may result in night-blindness." Perhaps the most common cause of the condition is the lack of vitamin A. Holm and Sugita[5] demonstrated that rats which were deficient in vitamin A were unable to see

normally in dim light. Yoshiue[6] tried unsuccessfully to detect differences in the color of the retinas which were removed from dogs in the same condition. Friderica and Holm[7] were more fortunate, and were able to find subnormal color in the fundus of vitamin A deficient rats. The color regenerated more slowly in the abnormal eye than in the normal. Tansley[8] estimated quantitatively the amount of regeneration of visual purple in healthy and vitamin A deficient rats. She definitely proved that the amount of visual purple is diminished in the dark-adapted retina of the vitamin A deficient rat.

Another phase of the same problem has been investigated by Yudkin, Kriss and Smith,[9] who found the retina to be an exceedingly rich source of vitamin A. It has been mentioned that the pigmented epithelium contains chromolipid which apparently is partly composed of carotene, an evident precursor of vitamin A, but no conjecture can be made at this time on the relation of carotene to the genesis of visual purple. Kuh [10] has made the interesting suggestion that since the retina exhibits the type of metabolism which is characteristic of malignant tumor tissue, and since vitamin A inhibits the growth of tumors, the large quantity of vitamin A present in the normal retina may explain how this tissue can have the metabolism of tumor tissue with no tumor growth. Unless better evidence is presented, however, this explanation is questionable. There is no reason to suspect that tumors occurred more frequently in retinas affected by vitamin A deficiency.

At this point, it is interesting to note that the retina and uvea contain more vitamin B than the other tissues. The vitamin B content of these two tissues is similar to that of the brain."

In the writer's experience with the photometer in a large number of patients found to be vitamin A deficient the response of the visual purple was more prompt and better after carotene in oil had been given in large doses for varying periods of time. It appears that carotene has a specific action on the regeneration of the visual purple, in addition to whatever part it plays in the nutrition of the eye.

In a number of patients who failed to respond to forced vitamin A therapy the addition of vitamin B in the form of brewer's yeast showed improvement in the regeneration of the visual purple. As vitamin B is an important constituent of the retina and also of the other related tissues, it appears that a certain amount of vitamin B must be present to secure the maximum benefit from vitamin A therapy and that in addition to assisting in the absorption of the vitamin A from the food, it must play some part in the metabolism of the eye.

It is interesting to note that carotene is found, according to Krause,[4] in various quantities in the following structures of the eye: choroid, iris, cornea, lens, retina, and sclera. This is in addition to the vitamin A found in these structures.

Some authorities have advanced the opinion that ocular cataracts might be caused by vitamin A deficiency and avoided by a diet rich in this vitamin. However, there is nothing conclusive to prove or disprove this claim at present. It would be of considerable scientific interest to study by means of the visual photometer a group of patients with cataracts in early stages.

Trachoma is, of course, a specific infection; however, it has been observed that it occurs more frequently and is more intractible in response to treatment when found, as it usually is, among poorly nourished and vitamin deficient individuals. Evidently vitamin A deficiency lowers the resistance of the tissues to infection.

EAR, NOSE AND THROAT

In a series of cases reported in a recent paper[11] I found that all patients with infections of the ear, nose and throat showed very low tests on the visual photometer. Those in whom the process was not of an extremely chronic nature responded well to large doses of carotene in oil.

Cody[12] states that "a diet deficient in vitamin A produces a metaplasia in the epithelium of the nasal mucosa. This change is from the cylindric to the stratified squamous cells. It begins in a group of cells deep in the epithelium, which by enlarging and fusing with other similar foci extend toward the surface."

According to Cody,[12] "The sinusitis and

otitis media once established are not cured by the addition of vitamin A to the diet."

In consideration of the wide prevalence of chronic sinusitis and otitis media, especially in certain localities, it appears that stress should be laid on a high vitamin diet and the use of vitamin concentrates during the winter months, so that the epithelial tissue of the upper respiratory tract will be protected against the inroads of infection. This is especially important in infants and growing children.

Bloch[13] found many severe infections in eighty-six cases of xerophthalmia. In addition to pneumonia and bronchitis in twenty-seven, there was otitis media in thirteen, pyelitis in twenty-seven, and pyodermia in fourteen cases.

During the recent depression I observed a number of patients with marked vitamin A deficiency who for months had lived on the scant food provided by the bread line in Chicago. They had no resistance and were the victims of all forms of infection. Their response to treatment was extremely discouraging. These cases presented very much the same picture as the drouth cattle, although they were able to live longer, possibly due to a storage of vitamin A. There is no doubt that the depression has done irreparable damage, especially to growing children, the food provided by relief agencies in most instances being notably deficient in vitamin A.

TEETH

According to Mellanby,[14] "Another outstanding feature of the experimental work was the demonstration that a deficiency of vitamin A or carotene played an important part in the development of the periodontal tissues and in the control of the onset of periodontal disease, including pyorrhea. Up to the present time these observations have not been applied to man, but that they can be so extended is strongly supported by the distribution of this disease in different races. For example, it is found that natives in many tropical regions are nearly free from caries, but are subject to periodontal disease when their diet consists largely of white maize and a little green vegetable and their bodies are exposed to sunshine."

Cady,[15] working among the Indians, made the following interesting observations:

"Examination was made of two thousand six hundred thirty Indian school children. The following figures show clearly the incidence of dental caries among them: age group six to eighteen years: pupils examined, two thousand six hundred thirty; pupils with caries, six hundred ninety-two; pupils without caries, one thousand nine hundred forty-eight.

"This comparatively low incidence of dental caries is due to conditions among the Pima, Apache and particularly the Navajo tribes. These three tribes are the best of all from a dental standpoint. The opposite is true of the Pueblos, who have a high incidence of dental caries. Of the two thousand six hundred thirty examined in the southwest, five hundred thirty-three were Pueblos. Of this number, two hundred ninety-two were found to have dental caries. "A recent examination of one thousand three hundred six northern and southern Pueblo Indian school children shows sixty per cent with dental caries. This examination was made by the field dentist of that district with mirror and explorer. Comparison with the foregoing figures show that while approximately twenty-five per cent of the total examined were Pueblos, more than forty per cent of those having dental caries were from this tribe. Considerable hypertrophy of gum tissue was observed in all school children, though the percentage of salivary deposits is low. Observations and reports indicate that there is a high rate of chronic low grade Vincent's infection prevalent among the entire Indian population of the country.

The greater percentage of defects is in the deciduous teeth of the younger age groups. This is clearly demonstrated by a comparison of the results of this survey among the southern Pueblo Indians of New Mexico; age group, six to eleven years; pupils examined, three hundred seventeen; pupils with caries, two hundred thirty-one; pupils without caries, eighty-six; age group eleven to sixteen years: pupils examined, one hundred forty-six; pupils with caries, sixty-seven; pupils without caries, seventy-nine."

Townsend[15] of the Indian Service, reports that the Navajos, who were in a better condition than the other Indians from a dental standpoint, lived almost entirely on a diet of mutton, which must have in some way supplied the necessary vitamins; while on the other hand, the Pueblos, whose diet consisted largely of jams and sweet stuffs with practically no vitamin A or other vitamins included in the diet, show marked dental caries.

In questioning a number of Indian children in whom vitamin A deficiency had been demonstrated by tests with the visual photometer, it was found that they preferred a diet similar to that of the Pueblos, with the exception of the fact that they had an occasional glass of milk. Certain sections of the Indian reservations or settlements still offer an opportunity to observe vitamin A deficiency due to poor nutrition. Dental caries, however, was not marked among the members of tribes who furnished the basis for the studies reported in this paper.

RESPIRATORY DISEASES

When studied with the visual photometer, all patients who have had recent attacks of pneumonia, bronchitis, or other respiratory infections, have been shown to be deficient in vitamin A. A number of patients seen following attacks of bronchial or lobar pneumonia improved rapidly with large doses of carotene in oil. They showed increased regeneration of the visual purple and gained in weight. The past histories of the majority of these patients would indicate that their diets had been deficient in vitamin A.

Beard[16] states: "Since we know that the children in under-privileged families die of respiratory diseases in large numbers, while those in better circumstances exhibit a remarkable resistance to the same maladies it may be worth while studying the posible vitamin A factor in this circumstance. It seems reasonable that until we know more about this situation, we advise pregnant women to pay attention to their intake of foods which contain vitamin A or its precursor, Carotene."

Blackfan[17] calls attention to the fact that in infants the commonest and earliest appearance of the keratinizing metaplasia is in the trachea and bronchi. He thinks that the early effect of the deficiency upon respiratory mucosa is, in our minds, a satisfactory explanation of the frequency, severity and persistence of the pneumonias that have been in most instances responsible for death.

There is but little known of the exact role played by vitamin A in tuberculosis. Basu[18] states: "The frequency of tuberculosis and respiratory infections in India is referred to the poverty of the diet in good sources of vitamin A, such as dairy products and eggs. Experiments on guinea pigs and an observation on tuberculous children, suggested that vitamin A might be valuable in prophylaxis and cure of tuberculosis."

The Plimmers[19] have noted that outbreaks of bronchial pneumonia occur in children on diets deficient in vitamin A and disappear when this vitamin is given.

Other investigators believe that possibly bronchiectasis is due to the keratinization of the bronchial epithelium with occlusion of the bronchioles by desquamated keratinizing epithelium.

It is the concensus of opinion that bronchitis and similar conditions in the respiratory tract do not respond permanently to any form of treatment after they have reached a chronic stage. It therefore seems exceedingly important as in sinus and middle ear involvement to prevent these conditions by the assurance of liberal quantities of vitamin A or carotene in the diet of infants and growing children.

Some clinicians specializing in tuberculosis have found carotene in oil very helpful in a large number of patients who are losing weight and are potential victims of pulmonary tuberculosis.

Carotene in oil in large doses in a great many cases of pulmonary tuberculosis stimulates the appetite and general physical condition of the patient; however, sufficient time has not elapsed to prove any curative value for vitamin A in tuberculosis.

THE ALIMENTARY TRACT IN VITAMIN A DEFICIENCY

As reported in previous studies, all patients in whom a pathologic condition of the gastro-intestinal tract had been proved, showed a marked vitamin A de-

ficiency when tested with the visual photometer. Some of these cases improved on heavy doses of carotene in oil, while others showed no improvement whatever.

A recent study on the fat absorption of individuals by Sullivan and Ferstrand[20] shows that individuals apparently normal in every way absorb a larger quantity of fats than did patients with cirrhosis of the liver, circulatory diseases, gall bladder conditions and various types of gastro-intestinal disturbances.

We pointed out in a previous paper[11] that the visual photometer furnishes a yardstick with which to measure the function of the liver, in that it measures vitamin A, a fat soluble vitamin; it appears that it would also furnish an index of the ability of the liver to utilize fats. The inability of the liver or the digestive tract to assimilate or utilize the vitamin A present in the diet would suggest an alteration of the liver function and probably accounts for a large number of the patients found vitamin A deficient while on a liberal diet rich in vitamins. It is a well known fact that the flow of bile is necessary for the proper digestion of fats. It is also known that the visual photometer shows that patients with catarrhal jaundice are very low in vitamin A.

Considerable work yet remains to be done to determine the exact factors governing the absorption of vitamin A or carotene from the gastro-intestinal tract. It has been found that in some instances carotene in oil is more readily absorbed when the individuals receive doses of vitamin B in the form of brewer's yeast. It is also noted that vitamin B is present in larger quantities in the retina and uveal tract than the other ocular tissues, giving rise to the suggestion that these vitamins act jointly, both in absorption and in the effect on the ocular tissues.

Recent articles by leading clinicians indicate the belief that gastric and duodenal ulcers are in part at least the result of vitamin A deficiency. Richards[21] states: "Of much interest also is the association of ulcerative colitis with corneal and conjunctival inflammation. A similar association of xerophthalmia and intestinal infection was described by Schick and Wagner, while Berghund *et al*, speak of cases of anemia in China, coupled with diarrhoea, where the diarrhoea responded dramatically to treatment with cod-liver oil."

Manville[22] notes the following: "In animals suffering from avitaminosis A, a reduction in mucus secreted in the stomach without a corresponding interference with acid production. It is fairly well recognized that vitamin A or its precursor, carotene, is necessary for the normal functioning of the mucous epithelium, whether of the respiratory, urinary or gastro-intestinal tract. White rats on a vitamin A deficient diet develop gastric ulcers and peptic erosions. Sixty per cent of all the animals on vitamin A deficiencies of various degrees showed these lesions. The percentage approached one hundred as the deficiency became more severe."

Mouriquand[23] has developed a concept of the alimentary dystrophy, caused by a slight vitamin deficiency and showing no visible or characteristic symptoms. He feels that this condition is to be distinguished both from that of fully developed vitamin deficiency showing characteristic symptoms and from the state of latent deficiency which precedes it. Unapparent dystrophy may be revealed and characteristic symptoms made apparent by a variety of circumstances, such as qualitative and quantitative changes in the other constituents of the diet, occurrence of infections or other intoxications and changes in environment. Many examples dealing with vitamins A and B, C, D, and the deficiency diseases (xeropthalmia, beri-beri, pellagra, scurvy, rickets) produced by their respective absences, are given in support of this theory.

I have observed considerable improvement in a large number of cases of colitis and the diarrhoea of diabetics with the use of large doses of carotene in oil. There was a change in the shape and consistency of the stools. Rhinehart,[3] who observed a series of cases of colitis, found that the most notable result of carotene in oil therapy was the relief of pain. He feels that the threshhold of pain is lowered by vitamin A. This observation may indicate a nervous element in colitis.

As stated previously, it is yet a mooted question as to whether disorders of the

gastro-intestinal tract produce a condition preventing the assimilation of vitamin A from the food, or whether a prolonged deficiency of vitamin A causes certain changes in the alimentary tract.

Krause[4] states: "Deficiency in regeneration of visual purple and night-blindness has been related to diseases of the liver. Baas and Koyanagi reported on the association of night-blindness and chronic uveitis with chronic hepatitis, especially cirrhosis of the liver. The latter writer believes that a degenerative process occurs in the pigmented epithelium. Dolganoff ties off the bile duct of dogs and thus produced choroidal and retinal changes. Majima repeated the same experiment with the frog, and reported a degeneration in the bacillary layer of the retina. Gluh, using rabits, repeated the experiment of Dolganoff and obtained no changes in the rate of visual purple regeneration. According to Sugita, rats injected with sodium glycocholate, taurocholate, cholate and bile, develop uveitis and hemeralopia. Bilirubin produces no effect. The clinical and histological investigations of the retinas of the rats showed the destruction of the outer layer, and cholesterol infiltration of the pigmented epithelium, while conditions were similar to those in ophthalmia hepatica.

"Retinitis pigmentosa has been associated both with hepatic disease and visual purple. Krause was unable to detect abnormalities of the liver function in patients with retinitis pigmentosa, uncomplicated by systemic disease. The laevulose tolerance, the disappearance time of bilirubin in the blood, the urinary and fecal biliary pigment and the Van den Bergh test were not abnormal. These results are contrary to those of Takahashi, who, from the study of the dye disappearance time, glucose and galactose tolerance, alimentary white cell count, and of the blood, urinary and fecal biliary pigment, found hepatic disfunction in twelve cases of pigmentary degeneration of the retina. Some of his patients, however, were affected with systemic diseases. Verhoeff, after a study of the pathology of retinitis pigmentosa, a disease in which night-blindness is a typical symptom, concluded that the primary effect is degeneration of the neuro-epithelium, which is directly related to the accompanying pathological changes in the pigmented epithelium."

CAROTENE, VITAMIN A AND ITS RELATIONSHIP TO GENITO-URINARY TRACT AND REPRODUCTION

Experiments of Mason[24a] and others give evidence that vitamin A is an etiologic factor in infections and other derangements of the genital tract. In his experiments, parturition was difficult in vitamin A deficient rats; there was impaired breast function and frequent foetal deaths. Many newborn rats were weak and died soon after birth. Mason also found that the testes of the rats were affected by vitamin A deficiency. The injury to the testes from vitamin A deficiency required two or three times as long for repair as injury caused by inanition. Similar findings have been reported by other investigators in this field. Several investigators in animal nutrition believe that sterility is often caused by vitamin A deficiency. This may account for sterility in young women who have lived on a vitamin A deficient diet in their period of development.

Mason[24b] found keratinization of the vaginal epithelium in vitamin A deficient animals and was able to heal this and to produce a healthy epithelium by the use of vitamin A. Wolbach and Howe[25] have reported the extensive transformation of simple epithelium in various parts of the body into stratified squamous keratinizing epithelium (particularly the epithelium of the upper respiratory tract, the renal pelvis, urinary bladder, seminal vesicals, epididymus, prostate, salivary glands and pancreas) as a result of vitamin A deficiency.

With the knowledge of the action of vitamin A, it would appear that nephritis may in part be due to vitamin A deficiency, the alteration of the epithelial tissues making way for the inroads of infection. It would also be expected that other infections of the kidney and bladder might have their origin in vitamin A deficiency.

CAROTENE, VITAMIN A IN RELATION TO URINARY CALCULI

It is generally conceded by urologists that urinary calculi are caused in part by conditions brought about through vitamin A deficiency, together with other dietary factors. The work of Higgins,[26] Bliss and

Livermore,[27] together with other investigators has proven that stones are formed in animals made vitamin A deficient. Some authorities have caused the stones to dissolve by the addition of vitamin A to the diet and a change of the basic alkalinity or acidity of the diet. I have noted cases of kidney stones showing other cardinal symptoms of vitamin A deficiency. My observations would lead to the belief that vitamin A therapy can have but little influence on large calculi already formed. In cases in which the calculi have been removed and the health of the kidney has not been impaired the addition of vitamin A to the diet causes clinical improvement in the patient. Sufficient time has not elapsed to determine whether or not carotene will prevent the reformation of stones in these cases.

LESIONS OF THE NERVOUS SYSTEM IN VITAMIN A DEFICIENCY

Zimmerman[28] makes the following interesting observations on the lesions of the nervous system in vitamin deficiency:

"Under the conditions of the experiments, which consisted essentially of maintaining rats on a ration adequate in all dietary essentials as far as is known except vitamin A, the following changes were produced in the nervous system:

"1. Degeneration of the medullary sheaths of the brachial plexuses and sciatic nerves, and less often of the vagus nerves. Such lesions were not found in the optic nerves.

"2. Degeneration of the medullary sheaths of the sensory tracts on the periphery of the spinal cord and in the posterior columns. Much less frequently similar lesions were found in both the crossed and uncrossed pyramidal tracts.

"3. Changes of the same nature in the posterior nerve roots and less frequently in the anterior nerve roots of the spinal cord. Evidence was adduced to indicate that the changes in the sensory tracts of the spinal cord followed those in the posterior nerve roots.

"With the onset of muscular weakness and incoordination in these animals anatomic changes like those just described were found at necropsy but they were not present for any appreciable period preceding the onset of the clinical signs.

"For a short but undetermined period following clinical signs of recovery from the nervous disease, marked lesions were still present in the nervous system at necropsy.

"These lesions in the nervous system were produced by a ration containing no cereals which might have contributed a 'toxic' substance to account for the degeneration of the myelin sheaths. Neither does a deficiency in unsaturated fatty acids appear to have played a role in their development."

In my observations on vitamin A deficient patients, either referred to me or discovered through tests with the photometer, there has been in many instances, marked improvement in nervous irritability by the use of large doses of carotene in oil. Observations also indicate that vitamin A and B apparently act jointly in the relief of nervous disorders, such as neuritis, pains due to colitis and similar conditions.

It would appear that vitamin A deficiency has a part also in the production of the so-called neurasthenic individual who is usually below par in nutrition. Further study on markedly deficient individuals and observation of the development of these conditions may lead to the linking of vitamin A deficiency with nervous disorders, as indicated in the experimental work previously.

VITAMIN A DEFICIENCY IN RELATION TO GLANDULAR FUNCTIONS

Vitamin A evidently plays an important part in the metabolism of internal secretions. In my observations with the visual photometer it has been noted that in cases of hyperthyroidism, so called neuro-circulatory asthenia, the regeneration of the visual purple was poor and there was a peculiar flickering of the lights not noted in other conditions. It is almost certain that vitamin A plays a large part in the important and unusual metabolism of the retina and recent studies would indicate that there is a relation of these structures to each other and to vitamin A. Von Querner[29] in his studies with the fluorescence microscope, observed that in the paraplasmatic fat inclusions of the hepatic parenchyma of the adrenals and of the hypophysis as well as the retinal rods and

cones, there is a substance that is luminous under the fluorescence microscope. The luminous substance is rapidly dissolved under the influence of ultra-violet rays. The author observed also that the droplets of some animal products and of various synthetic vitamin A preparations have the same luminescence. According to measurements with the spectral ocular and on the basis of their deviations they are probably the result of carotene admixtures in the organs of rats deprived of vitamin A for long periods, the luminous substance is either absent, or present in small quantities. The author concludes that the luminous substance is either identical with vitamin A or represents some form of the vitamin. Further study on this interesting revelation should bring some new knowledge of metabolism, and apparently strengthens belief that the visual photometer is a very accurate method of measuring the vitamin A content of the system.

RELATION OF VITAMIN A DEFICIENCY TO BLOOD

As observed in a previous series of cases reported there was an improvement produced in the appetite and vigor of patients with far-advanced pernicious anemia by the use of large doses of carotene in oil. Further studies made since that time have shown that in early cases of anemia, a large dosage of carotene in oil has resulted in an improvement in both hemoglobin and red cells. Sandler[30] reports a series of patients observed over a period of eleven months who showed a ten to twenty-five per cent increase in hemoglobin and an increase of from 500,000 to 1,500,000 red cells. These children also showed an increase in the number of white blood cells, marked general improvement and reduction in the number of infections.

Cramer[31] has found that the absence of fat soluble A vitamin from the diet of the rat constantly produces a progressive decrease in the number of blood platelets. This thrombopenia is the only constant lesion encountered in deficiency of this vitamin and is characteristic, just as lymphopenia is characteristic of deficiency of water soluble vitamin B. Further study on a large group of cases should prove interesting and show the action of vitamin A on blood-forming organs.

CASE HISTORIES

From a most recent group of vitamin A deficient patients I have studied, the following brief case histories are some of the new theories advanced in this paper:

Case 1. Miss A, aged twenty-three, office worker, had an uneventful past history with the exception of an appendectomy about two years ago. She had suffered quite a bit of worry and shock occasioned by sudden deaths in the family. She noted that although her work was not hard she was unusually tired at night and was not rested by sleep; she was nervous and slightly irritable and had been losing some weight. Physical examination showed an anemic, white female who appeared undernourished. A complete blood count showed: Hemoglobin sixty-five per cent; red blood cells, 3,000,000; no abnormal cells found. Otherwise apparently normal. Patient was given twenty-five minims of carotene three times daily with a diet rich in fats and mineral salts. At the end of a month hemoglobin was eighty-five per cent, and the red blood cell count was 4,200,000. The tendency to fatigue was gone and there was one point gained on the visual photometer. This patient was very fair and after exposure to the hot July sun rays she showed a slight carotenemia involving the fingers and the feet. The carotenemia disappeared upon reduction of the dosage of carotene. The patient continued to gain weight and despite acceptance of a new and much more exacting position, does not notice the marked fatigue. There was a slight drop in the hemoglobin following the removal of a vaginal cyst. However, the hemoglobin has returned to normal.

Case 2. Miss B, professional woman, white, aged thirty-three, had been underweight for a number of years and for the past year had been under observation for possible incipient tuberculosis. This patient also had a diagnosis of eczema and had a dry skin.

The visual photometer test showed only three points on the wedge and after taking twenty-six minims of carotene in oil, t.i.d. for two months she showed a gain of two points on the photometer. This gain was maintained also one month after carotene was discontinued.

Without any change in diet, but with in-

creased appetite, the patient gained eighteen pounds in weight and felt better than she had in years.

This patient had been very careful of her diet due to eczema. For years she had eaten the diet of an institution. As soon as a liberal quantity of vitamin A was added to her diet she utilized the normal food intake to put on the necessary weight.. There was also a marked improvement in the skin condition.

Case 3. An Indian boy, aged fifteen, was listless and had a poor appetite. His school grades were poor. On first test this boy showed only two points on the photometer but after taking carotene in oil, t.i.d. for thirty-seven days without change in the diet he showed two points improvement on the photometer. During the summer he has continued to receive carotene in oil, has gained twenty pounds in weight and his teachers report that he is much better in his school work and shows a better play activity than in last year.

CASES SHOWING GRADUAL IMPROVEMENT

Nine cases tested before and after the use of carotene in oil showed one point or more improvement on each test made at intervals of from two weeks to three months. Three or more of these tests were made on each individual. These cases are among the group which I have classed as chronically deficient and have continued to improve clinically in most instances since the use of carotene in oil was discontinued.

CONTROL CASES

Eight children used as controls in the orphanage showed no improvement on the photometer without carotene. However, after giving two of these children carotene for thirty days there was an improvement of two points. Another group of cases showed no increased response to the photometer despite regular doses of carotene. In these cases lack of response was apparently due to severe attacks of measles or mumps, chronic malaria or endocrine disorders. In two instances no obvious explanation for the lack of response was available.

VITAMIN A OR CAROTENE IN OIL THERAPY

In planning any treatment it is always necessary to individualize. No two patients are precisely alike and in devising an optimal vitamin A therapy one must be guided by a full consideration of the varying factors in the diet, environment, occupation and other things affecting the health of the patient. The presence of chronic infection, glandular disorders, digestive disturbances or alterations of liver function may prevent absorption of the vitamin from the food or its conversion after absorption.

To secure the maximum benefit from vitamin A therapy the diet must be arranged to provide a liberal supply of mineral salts with the assured presence of at least vitamins B and D.

To take advantage of the increase in appetite usually found with the use of large doses of carotene in oil, a well balanced diet, rich in fats is highly essential because the fats, if assimilated, assist in absorbing the fat-soluble vitamins A and D. Increase in weight is apparently due to the deposition of the fat in the tissues through the increased metabolism made possible by large doses of carotene in oil.

Ideally, undernourished children and also the adults who lack vigor, have poor appetites and other symptoms of vitamin A deficiency should be tested with the visual photometer. However, as this is not yet possible, the routine use of carotene in oil is advisable in these types of cases as there are no known contra-indications other than the presence of leukemia and no harm can be done.

In this study on vitamin A therapy, carotene in oil has largely been employed. Carotene in oil has been given in varying doses over long periods of time to several hundred individuals of all types. These cases have been observed for clinical improvement and have been rechecked in many instances six or eight times with the visual photometer.

The following dosage of carotene in oil has been worked out from the studies reported in this paper and in a previous study[6] comprising several hundred cases.

Five minims, t.i.d. (taken during meals) was determined to be the minimal dose of carotene in oil for infants and children up to six years. In the presence of severe, acute infections or contagious diseases

such as measles or mumps, a larger dose of at least fifteen minims t.i.d. is necessary until the systemic vitamin A storage has been rebuilt.

In adults an initial dose of ten or fifteen minims, t.i.d. is given with meals and increased to 25 minims, t.i.d. This latter dosage is continued for such a time as is necessary to rebuild the vitamin A content of the body. This time in adults varies more than in children. In some cases which may be termed chronic deficiencies, the photometer tests showed a gradual gain and corresponding clinical improvement was noted. Once these individuals had gained sufficient weight and vigor a small dose of carotene in oil daily, usually at least thirty minims, in most cases kept the individual at the same vitamin level, according to the photometer tests, as was obtained under heavy dosages of carotene in oil. A number of individuals who discontinued the use of carotene in oil after a month or so showed a lower reading on the photometer while others on a liberal diet retained a normal reading.

In view of the fact that it has been definitely proven that the natural sources of vitamin A are largely lost or reduced in value during winter months and the incidence of infection is greater, it would appear that all individuals who are not up to par physically and who labor under more or less strain either in school or business should have liberal doses of carotene in oil or other vitamin A products. Though we do not realize the full significance of the vitamins in diet, yet we know enough to justify our urging that every effort possible be made to increase the vitamin A content of real honest-to-goodness foods such as milk, butter, cream and vegetables and to discourage all things that will make a commercial by-play of this important element of the diet.

Taking into consideration the low vitamin content of natural sources of vitamin A during the winter months, the methods used in preparing food in large quantities in institutions, hospitals and other places where a high vitamin content is especially desired, it has been suggested by a well-known administrator that it would be a matter of economy to add a known amount of carotene in oil to the daily diet of each patient or inmate, rather than to attempt to secure this vitamin by using large quantities of vegetables of doubtful vitamin content.

Our observations have shown that individuals who have had a definite amount of vitamin A added to the same basic diet used for months previously, showed a gain in weight energy and resistance to disease. It would therefore appear that in addition to securing definite results in health, an economy in the food budget could be realized by the addition of known vitamin content using the minimum requirements for health.

CONCLUSIONS

1. The value of the visual photometer has been definitely established as a means for the clinical detection of vitamin A deficiency.

2. An extensive series of tests with the visual photometer on a large group of individuals of various types, has revealed that the diet of the average person is deficient in vitamin A.

3. We have found that those individuals who are active, full of vim and vigor, athletic and apparently realizing optimum health, uniformly show a high test on the visual photometer while those showing low tests on the photometer do not realize optimum health and activity.

4. It has been definitely proven that carotene in oil assists in the regeneration of the visual purple and therefore must also rebuild the vitamin A content of the entire body.

5. It has been proven clinically that when carotene in oil is given the vitamin A deficient individual who is on an average diet, there is an improvement of the patient with often a decided gain in weight, showing that vitamin A assists in the utilization of the food ingested into the system.

As the food of every one is low in vitamin A during certain months of the year, it appears that the routine use of carotene in oil for growing children and adults showing evidence of lowered vitality would be indicated to furnish increased resistance through the increased weight and vigor.

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Clinical Use of Cyclopropane and Tribrom-Ethanol in Ameylene Hydrate

Paul M. Wood, New York (Journal A. M. A., January 25, 1936), has used cyclopropane anesthesia in surgical procedures of all types including operations on the central nervous system, abdomen, superficial operations, and obstetric, gynecologic and otolaryngologic operations. It has been administered in various combinations with anesthetic gases and vapors, with or without preliminary medication, including basal narcotics, in 917 cases with only nine total failures. The combined use of cyclopropane and tribrom-ethanol in amylene hydrate will prove satisfactory if careful selection of the patient, adequate apparatus for the administration of cyclopropane and tribrom-ethanol in amylene hydrate, and accurate timing of the anesthetic procedures are considered. To facilitate the preparation and administration of tribrom-ethanol in amylene hydrate, he describes an apparatus and the technic of its use. Although tribrom-ethanol in amylene hydrate tends to depress respiration, and although excessive concentrations of cyclopropane depress it markedly, yet respiratory depression has been absent in all but two cases of this series. The disadvantages of using the anesthesia are: 1. More time is required of the anesthetist than by many other technics. 2. Cyclopropane is inflammable. 3. Special equipment, dependable gages for indicating minimal flow of gases, means for efficient carbon dioxide control and equipment that will not leak are essential. 4. Danger from technical error of administration is greater than with nitrous oxide or ethylene. 5. The prohibitive cost of cyclopropane when not administered by a proper technic, is a definite disadvantage. 6. The technic of combined tribrom-ethanol in amylene hydrate and cyclopropane anesthesia should not be used on patients exhibiting marked disease of the kidneys, liver or rectum. In these patients cyclopropane may be more safely used without tribrom-ethanol in amylene hydrate. The advantages of its use are: 1. There is an unusually wide margin of safety between the therapeutic and toxic dose. Oxygen concentration is always very high. This is a great advantage, especially for patients suffering with anemia, starvation, shock, pulmonary or cardiac disease, or respiratory obstruction. 2. A wide range of depth of anesthesia is available without anoxemia, and the depth is easy to control. 3. Muscular relaxation is definitely increased. 4. Marked contraction of the uterine muscle following cesarean section has been reported by several operators. In these cases cyclopropane and oxygen were used without preliminary medication or basal narcosis. 5. In the combined use of cyclopropane with tribrom-ethanol in amylene hydrate by the technic outlined, there has been a decrease in operative and post-operative morbidity. 6. The psychic advantage of tribrom-ethanol in amylene hydrate is marked, as no other method of induction of anesthesia is more pleasant to the patient. Apprehension is reduced. 7. The combined use of these two agents is proving satisfactory to the surgeon, the patient and the anesthetist by providing an efficient, pleasant and safe anesthesia.

THE PRESIDENT

DR. GEORGE ROBERT OSBORN

Graduated from University of Illinois College of Medicine, 1906.

His work is confined to Gynecology and Obstetrics with office in the Medical Arts Building, Tulsa, Oklahoma.

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DR. L. S. WILLOUR.....Editor-in-Chief
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DR. T. H. McCARLEY.....Associate Editor
McAlester, Oklahoma

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This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. $4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be suplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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EDITORIAL

THE ENID MEETING

The medical profession of Enid is entitled to the most hearty congratulations from the medical profession of Oklahoma for the excellent manner in which they entertained the State Medical Association. The crowd far exceeded all expectations, as over five hundred were registered, and there were ample facilities to care for this large registration.

The hotel facilities were adequate and we heard no complaints as to the service rendered. While it was necessary to divide the exhibits, the commercial exhibits being held at the Youngblood and the scientific exhibits at the Oxford, they were liberally patronized and all exhibitors felt that they had been well repaid for their time and effort.

A very noticeable feature was the attendance at the Sections. All Sections were crowded, the papers presented were well above the average and the discussions were participated in by many of those in attendance.

Our guest speakers were well received and contributed a great deal toward making the meeting well worth while.

The Auxiliary had probably the largest out of town attendance that they have ever had and at the luncheon the attendance was nearly twice the number they had expected. The ladies were royally entertained by the wives of the Enid physicians and came away expressing themselves as delighted with all the features of their entertainment.

There was much enthusiasm demonstrated at the meetings of the House of Delegates, many of the Delegates participating in the discussion and their discussion showed that they had given many of the economic subjects, pertaining to medicine, considerable thought.

Dr. Sam A. McKeel, Ada, was elected President-Elect and is that sort of doctor whom you will all agree will capably represent organized medicine in Oklahoma.

A synopsis of the minutes of the Council and House of Delegates will follow in this issue, and I am sure all the doctors will feel that some careful thought has been given to some of our most urgent problems.

If you did not go to Enid you missed a fine meeting with excellent scientific discussions and good entertainment.

ANNOUNCEMENT

At a meeting of the Board of Regents of the Oklahoma University April 1st the following changes were made in the faculty of the Medical School.

The Department of Epidemiology and Preventative Medicine was changed to the Department of Hygiene and Public Health with Dr. Onis G. Hazel as head.

Dr. W. K. West was designated acting

head of the Medical School's Department of Orthopedic Surgery during the leave of absence of Dr. Samuel R. Cunningham.

The resignation of Dr. L. C. McHenry from the school's faculty was accepted.

A leave of absence was granted Dr. Lee K. Emenhiser, acting head of the Department of Anatomy, to continue post graduate study.

Editorial Notes—Personal and General

DR. C. S. WALLACE, Holdenville, who has been ill, is reported improved.

DR. T. B. FELIX, Holdenville, is reported much improved following a hernia operation.

RESOLUTIONS

DR. PAUL C. GEISSLER

Whereas, The Tulsa County Medical Society having lost one of its members, Dr. Paul C. Geissler, whose death occurred March 16, 1936, and, whereas, we regret, as do a host of friends and colleagues, his untimely death.

Therefore, Be it resolved by the Tulsa County Medical Society that our sympathy be extended to his family and friends.

Be it further resolved, that these resolutions be incorporated in the records of this society and that a copy be sent to the members of Dr. Geissler's family.

Roy L. Smith, M.D., Chairman
Resolutions Committee.

DOCTOR JOSEPH ERWIN WALKER

Dr. Joseph Erwin Walker died at his home, 1829 North Broadway, Shawnee, Oklahoma, March 21, as a result of leukemia. He was born March 19, 1878, at Plevna, Alabama, but moved to Texas when a boy. He received his medical education at Baylor University, Waco, Texas. He came to Earlsboro, Oklahoma, in 1906 and moved to Shawnee in 1918. Dr. Walker was the Pottawatomie County Health Officer for twelve years. At the time of his death he was the county chairman of the democratic party, which office he had held for four years. He had been a member of the Pottawatomie County Medical Association for twenty-eight years. He was a member of the Methodist church, South. In 1909 he married Miss May Bender, who survives him. He is also survived by two daughters, Mrs. Donald Ellis, and Sue May Walker, and a son, Erwin Walker.

Funeral services were held at the Gaskill Chapel and were conducted by Rev. R. E. L. Morgan with interment in Resthaven Memorial Park.

TRANSACTIONS OF THE FORTY-FOURTH ANNUAL SESSION OF THE OKLAHOMA STATE MEDICAL ASSOCIATION, ENID, APRIL 6, 7, 8, 1936

THE COUNCIL
April 6, 1936, 3 P. M.

Meeting called to order by the President, Dr. Ritzhaupt, with the following members present: Doctors Ritzhaupt, Osborn, Templin, Speed, Risser, Chase, Livermore, McKeel, Adams, Fulton and Willour.

On motion of Dr. Speed, which was carried unanimously, Dr. J. D. Osborn, Jr., of Frederick, Secretary of the State Board of Medical Examiners, was given permission to participate in the meeting.

The minutes of the Council meeting of January 5, 1936, were read and approved without correction.

Dr. Speed was then called upon for a report as to the activities of his Committee, in which an attorney was authorized to look into the subject of revocation of licenses of certain irregulars, and he reported that after consultation with Mr. J. Berry King, of Oklahoma City, it was his opinion that under the present Medical Practice Act it would be impossible to make a revocation of license stand up before the State Supreme Court. He further advised that a new Medical Practice Act be written (a copy of which was submitted to the Council) and effort be made to pass it during the coming meeting of the Legislature. A copy of the proposed Medical Practice Act was submitted and it was briefed for presentation to the House of Delegates.

The President then called for a report of the Auditing Committee composed of Drs. Fulton, Adams, and McKeel. They reported that their audit showed the books to be correct; all money being properly accounted for and action of the Council of a year ago relative to the cashing of $4000.00 in Liberty Bonds being complied with. On motion of Dr. Templin, duly seconded, the Auditing Committee's report was accepted.

The Secretary-Treasurer-Editor reported that of the $861.75 reported as bills receivable $287.00 had been paid since the audit, leaving a balance to be collected of $574.75.

Dr. Osborn was then heard by the Council at which time he discussed the subject of irregular practice in cooperative hospitals and said that the Medical Board of Examiners has the power to revoke, suspend or put men on probation under certain conditions defined in the Medical Practice Act, and he further stated that he felt sure that if these charges were presented in proper form before the Board that the licenses would probably be revoked, but he considered the advice of Mr. King is such that it should be accepted by the Council and careful consideration should be given these matters before charges were preferred before the Board.

He assured the Council that the Governor of the State was in complete sympathy and accord with organized medicine of Oklahoma and that he had expressed himself in the following words: "I have appointed the Medical Board and am going to let the Medical Board run it."

Dr. Tisdal of Elk City, was then presented to the Council and discussed freely and intelligently the subject of cooperative hospitals in his section of the state.

The meeting of the Council adjourned to reconvene April 7th at 3 P. M., at which time Mr. J.

Berry King was to be presented and advise with the Council as to further action.

L. S. WILLOUR,
Secretary-Treasurer-Editor.

THE COUNCIL
April 7, 1936, 3 P. M.

Meeting called to order by the President, with the following present: Doctors Ritzhaupt, Fulton, Adams, Chase, McKeel, Speed, Walker, Templin, Osborn, and Willour.

A telegram from Mr. J. Berry King, read by the President, which stated that he would be unable to attend the meeting of the Council.

The matter of increase of dues and solicitation of funds to carry on the affairs of the State Medical Association was freely discussed and the method of carrying out this matter was left to the Legislative Committee. The amount of increase of dues to be $4.00, making the annual dues $8.00 per member to the State Association.

The method of finance will be announced later by the Legislative Committee.

The new Legislative Committee was selected by the President-Elect to be Drs. H. K. Speed, Sayre; McLain Rogers, Clinton; E. O. Barker, Guthrie. Dr. Speed to act as Chairman.

A bill from the Committee on Fellowship was presented and allowed.

According to the recommendations of the House of Delegates $200.00 was allowed to the Committee on the Study and Control of Cancer, and sufficient funds allowed the Committee on Post Graduate Medical Teaching to bring the amount to $1200.00.

By motion, seconded and carried, the Council adjourned.

L. S. WILLOUR,
Secretary-Treasurer-Editor.

HOUSE OF DELEGATES
April 6, 1936, 8 P. M.

Meeting called to order by the President, Dr. Ritzhaupt.

Motion made, seconded and carried that the reading of the minutes of the last meeting of the House of Delegates be dispensed with as they were published in the June issue of The Journal.

The President then called upon the Secretary to give a verbal report of the Council Meeting, January 5, 1936, at Oklahoma City. The Secretary reported that at this time routine business of the Council was accomplished. Arrangements for the Annual Meeting at Enid discussed and dates set. At this meeting there was a liberal discussion of some irregularities throughout the State in the form of contract practice, and authority was given the Council to obtain legal advice relative to proper procedure against these irregularities.

Motion was made, seconded and carried that the verbal report of the Secretary be accepted.

The Secretary at this time was called upon to analyze the Secretary's report, which was done and on motion, duly seconded the report was accepted and approved.

On motion of the President the report of the Committee on Maternity and Infancy was read and on motion of Dr. Baker, Enid, and seconded by Dr. Adams, Vinita, the report and their recommendations were accepted.

Next was presented the report of the Committee on Post Graduate Medical Teaching. The Committee wished to express their thanks to Mr. L. W. Kibler for his assistance and the Committee requested that the appropriation of a sufficient amount to bring the fund back to the original sum of $1200.00 be made. On motion of Dr. Willour, seconded by Dr. Kuhn, the above recommendation carried.

Next was read the report of the Committe on Medical Economics, as published in The Journal, and it was estimated that to carry out their recommendations would require the sum of between $2500.00 and $3000.00. On motion of Dr. Aisenstadt, duly seconded, it was unanimously agreed that their recommendations be referred to the Council for action.

A report of the Committee on Medical Education and Hospitals was then brought before the House. Dr. Reed suggested that their recommendation be amended to read, "The standards of the American College of Surgeons and the standards that are made by the American Medical Association."

The amended report was unanimously adopted.

Report of the Committee on Fellowship was adopted as published in The Journal.

Report of the Committee on the Study and Control of Cancer was next presented. The report was adopted carrying with it a request that $200.00 be set aside for the expense of this Committee where it was impossible for the County Society to meet the expense of a visitation.

The following Committees failed to present reports to The Journal for publication or to the House of Delegates: Conservation of Vision, Crippled Children, Industrial and Traumatic Surgery, Study and Control of Venereal Diseases; Study and Control of Eugenics, Study and Control of Tuberculosis, Federal Emergency Relief Medical Service, Study and Encouragement of Rural Practice, Public Policy and Legislation.

At this time the Committee on Credentials made their report.

The President then appointed a Committee on Resolutions, composed of Drs. Tisdal of Elk City, Walker of Shawnee, Stevenson of Tulsa, and Pounders of Oklahoma City. He also appointed a Committee on Publicity composed of Drs. Baker of Enid, A. W. Pigford of Tulsa, Rollins of Prague and G. A. Harris of Hugo.

Dr. Baker then presented a resolution on Juvenile Delinquency which was referred to the Resolutions Committee.

On motion of Dr. Glismann, duly seconded, Dr. W. S. Watson, Okmulgee, was made an honorary member of the Oklahoma State Medical Association.

On motion of Dr. Starry, seconded by Dr. W. A. Cook, Dr. W. J. Jolly, of Oklahoma City, and Dr. J. A. Hatchett, Oklahoma City, were made honorary members of the Oklahoma State Medical Association. Dr. Starry recommended that Dr. Jolly be an affiliated member of the American Medical Association. Carried.

Motion made, seconded and carried that the House of Delegates adjourn.

L. S. WILLOUR,
Secretary-Treasurer-Editor.

HOUSE OF DELEGATES
April 7, 1936, 8 A. M.

Meeting called to order by the President and report of the Credentials Committee called for. Roll call showed the vote of the House of Delegates to be eighty.

The President then called for nominations for the office of President-Elect. Dr. E. S. Ferguson,

Oklahoma City, placed the name of Dr. Milton K. Thompson, Muskogee. Dr. J. S. Fulton, Atoka, placed the name of Dr. Sam A. McKeel, Ada. Dr. A. M. McMahan, Duncan, placed the name of Dr. D. Long, Duncan. On motion made, seconded, carried, nominations closed, ballot taken. There not being a majority for any candidate in the first ballot the name of Dr. D. Long was dropped and the House proceeded to vote upon the names of Drs. Thompson and McKeel. Dr. McKeel, receiving the majority of votes, was declared elected President-Elect of the State Association.

The next order of business was the election of Delegates to the American Medical Association and the names of Dr. W Albert Cook, Tulsa, and Dr. Horace Reed, Oklahoma City, were presented. On motion, seconded, the nominations were closed and the Secretary instructed to cast the ballot of the House of Delegates for these two delegates. The President then declared Dr. Cook and Dr. Reed elected Delegates to the American Medical Association.

The next order of business was the selection of Councilors for Districts 7, 8, 9 and 10. For Councilor District No. 7, the name of Dr. J. A. Walker, Shawnee, was presented; for District No. 8, the name of Dr E. A. Aisenstadt, Picher, was presented; for District No. 9, Dr. L. C. Kuyrkendall, McAlester, was presented; for District No. 10, Dr. J. S. Fulton, Atoka, was presented.

On motion duly made, seconded and carried, the Secretary was instructed to cast the ballot for these Councilors. This having been done the President declared them elected.

The report of the Necrology Committee was next presented and is as follows:

Mr. President and Members of the Oklahoma State Medical Association:

Another year has taken its toll of our colleagues. It is with mingled pride and regret that this Committee pays tribute to those departed. As representatives of the State Medical Association we express our heartfelt sympathy to friends and relatives of the deceased.

It is most appropriate that we express our gratitude to these men in the immortal words of Robert Louis Stevenson:

There are men and classes of men
That stand above the common herd—
The soldier, the sailor, the shepherd not infrequently.
The artist rarely, rarer still the clergyman,
The physician almost as a rule.
He is the flower of our civilization,
And when that stage of man is done with
Only to be marvelled at in history,
And he will be thought to have shared but little in the defect of the period,
And to have most notably exhibited the virtues of the race.
Generosity he has, such as is possible only to those who practice an art,
And never to those who drive a trade; discretion,
Tested by a thousand secrets; tact,
Tried in a thousand embarrassments and what are most important,
Herculean cheerfulness and courage
So it is that he brings air and cheer to the sick room
And often enough, though not as often as he desires, brings healing.

The following is a list of our deceased members since April, 1935:

V. H. Barton, McAlester.
Martha Bledsoe, Chickasha.
Chas. P. Brown, Oklahoma City.
A. E. Carlock, Hartshorne.
A. G. Childers, Mulhall.
J. J. Clark, Tishomingo.
T. J. Colley, Hominy.
W. M. Cott, Okmulgee.
J. E. Davis, McAlester.
T. J. Dodson, Norman.
G. O. Dunseth, Tulsa.
Paul Geissler, Tulsa.
Harrell Hardy, Poteau.
Ray R. Hume, Minco.
Alva Jones, Sapulpa.
James C. Johnston, McAlester.
Forrest S. King, Muskogee.
W. M Leslie, Blackwell.
James M. Mattenlee, Sapulpa.
J. T. Moon, Miami.
O. H. Parker, Custer City.
J. J. C. Rembert, Okmulgee.
Wm. J. Risen, Hooker.
Frank H. Robertson, Blackwell.
M. M. Roland, Oklahoma City.
H. D. Shankle, Ohio.
Millington Smith, Oklahoma City.
J. M. Stemmons, Collinsville.
Roy M. Sweeney, Sapulpa.
Dean Widener, Okmulgee.
J. P. Williams, Picher.

Committe on Necrology: J. M. Alford, Oklahoma City, Chairman; G. W. Baker, Walters; Roscoe Walker, Pawhuska.

On motion of Dr. J. A. Walker, which unanimously carried, the House of Delegates stood for one minute in silence in memory of our dead.

The following resolution on Juvenile Delinquency, presented by Dr. R. C. Baker, Enid, was unanimously accepted:

RESOLUTION

WHEREAS, the laws of Oklahoma relating to juvenile delinquency limit the jurisdiction of the juvenile court to children under sixteen years of age, and

WHEREAS, common experience and the experience of the medical profession has demonstrated that the most dangerous age for juvenile delinquents, and particularly venereal diseases of delinquent children occur after said children have reached the age of sixteen years, and

WHEREAS, there are no adequate means provided by our laws to deal with this very serious problem after delinquents have reached the age of sixteen years, and

WHEREAS, the welfare of these delinquents themselves and of society at large imperatively demands that these delinquents be amenable to adequate legal solution, now,

THEREFORE BE IT RESOLVED by the Oklahoma State Medical Association in State Convention assembled this sixth day of April, 1936, that it is the deliberate sense of this association that the Laws of Oklahoma relating to juvenile delinquents should be amended to extend the jurisdiction of the Probate Court over all delinquent children during their minority.

BE IT FURTHER RESOLVED that the Legislative Committee of this association be, and is hereby ordered to call this situation to the attention of the Oklahoma State Legislature and use its best efforts to effect an amendment to our

juvenile delinquency laws in conformity with the views and purposes of this resolution.

Passed and aproved by unanimous vote of this association this sixth day of April, 1936.

Submitted by Roscoe C. Baker, Delegate Garfield County, D. B. Ensor, Delegate Woods County, O. H. Cowart, Delegate Crek County.

Approved by Committee on Resolutions, V. C. Tisdal, Chairman, J. A. Walker, C. M. Pounders

The Resolutions Committee next presented a resolution regarding an Executive Secretary, signed by Drs. H. Dale Collins, E. S. Ferguson and Horace Reed, all of Oklahoma City, which after discussion was unanimously adopted.

After considerable discussion as to irregular practices, particularly in the western part of the state, it was recommended that the dues of the State Association be increased to $8.00 per year.

At this time the President called upon Dr. E. O. Barker to read the report of the Committee on Public Policy and Legislation, which was adopted. It is as follows:

REPORT OF LEGISLATIVE COMMITTEE

The time has now arrived for a grass roots campaign against State Medicine, and every doctor who did not hear the debate broadcast Tuesday, November 12th, 1935, between one and two p. m. over the National network from Chicago, should avail himself of a copy of this debate. In this broadcast the affirmative phase was discussed by Wm. F. Foster and Bowen Aly, and the negative phase was ably discussed by Morris Fishbein, M.D., and R. G. Leland, M.D. Readers of this debate will realize the seriousness and the immediate danger which confronts us if we sit back and "let George do it." The non-medics and some lawyers will continue to make a fat living and dictate prices and the manner in which the American doctors can conduct their practice. The committee believes that the A. M. A., backed by the State and County Societies can most effectively oppose State Medicine, or at least propose something better. This may be accomplished by a publicity campaign by a corps of speakers made available by the A. M. A. to State Medical Societies and by radio talks, newspaper and magazine articles. This topic has failed to get the support of A. M. A. delegates on diferent occasions, and the committee on legislation unanimously recommends that the authorities of the State Association instruct the delegates to the A. M. A. to make every effort to have the A. M. A. sponsor a definite program to accomplish this.

The Surgeon General, Dr. Thomas Parren, Jr., wants socialized medicine, and if Dr. Parren's plan is put into force, many doctors in the United States will be obliged to take city, state and federal jobs.

In the vicinity of New York, there are now one hundred seventy-four hospitals having a hospitalization plan with 65,000 prospective patients; other cities which have hospital plans are Dallas, San Antonio, Houston, New Orleans, Memphis, Sacramento, Minneapolis, St. Paul, Cleveland, Rochester, Durham, Newark, N. J., and Oklahoma City. Statistics show that four hundred people are now enrolling each day.

As soon as hospitalization and group practice get under way, there will be a strife among the groups; this will be the beginning of the end, especially for the doctor who does not have some hospital connection.

There should be, if possible, some legislation in this State to prevent charity cases from bringing suits to collect alleged damages against a hospital or doctor for services which they have received free; also legislation preventing any person bringing a suit against a hospital or doctor after a specified time, which should not be over three years. Why should one risk his lifetime savings for nothing? Yes, few carry insurance, but this does not pay for undesirable advertising.

We believe the Crippled Children's law is a misnomer as worded. The law includes any person under twenty-one years of age, suffering from acute appendicitis or heart trouble, as well as chronic deformities, such as club feet, etc.

Our Medical Practice Act poorly regulates the M.D.'s, and permits all others to do as they please, and it is high time something along this line should be done. If you think this will care for itself, just go to some cult's stairway and count the number of people entering during one day, then compare. It matters not who you are, or where you are, the cold facts will give you the jitters. Take a day off on election day and use your influence at the polls. When you arrive at the voting place, you will find the cult is already there, using his influence and money, because he knows that LEGISLATORS FAVOR THOSE WHO ELECT THEM. This was exemplified by our last legislature. The verdict was rendered, and sealed, before the hearing took place, and the M. D.'s got the horse laugh. In fact, there were only a few legislators present at the hearing, yet the senate chamber was full of drugless healers. Legislators will listen before they are elected, and each county society should organize the doctors, dentists, druggists and nurses and demand that each candidate for the Senate and House of Representatives is willing to give the medical profession a new and fair deal. It takes money to do this. Five dollars per member would raise $7,500. This, with each and every doctor's influence at the polls would get the job done.

The council has a committee of three, i. e., Dr. L. H. Ritzhaupt, President of the State Asociation, Dr. L. S. Willour, Secretary of the Association, Dr. H. K. Speed, Councilman, who has retained J. Berry King, our former attorney general, to rewrite the Oklahoma laws regulating the practice of medicine and surgery, and is patterned after several other state laws. The committee on public policy and legislation, recommends that the same committee be retained, with the addition of the incoming President, and instruct this committee to present to the next legislature whatever legislation is needed to regulate and control every person who treats the sick.

Fight now for your existence. For once the doctors should agree and work together for some legislative program backed by the State Association.

C. B. Barker, Guthrie.
J. S. Fulton, Atoka.
McLain Rogers, Clinton.

Dr. Pigford, Tulsa, then presented a resolution recommending that the office of Speaker of the House of Delegates be created. The Speaker to be elected by the House of Delegates and to serve a term of three years. The President ruled that this being an amendment to the Constitution, the resolution lay over until the next annual meeting.

At this time nominations for the meeting place of 1937 were called for and Dr. Larrabee of Tulsa, on behalf of the Tulsa County Medical Society, invited the Association to meet in that city. On motion of Dr. W. A. Cook, duly seconded, nominations closed, and Tulsa was named the next meeting place.

The House of Delegates then adjourned.

L. S. WILLOUR,
Secretary-Treasurer-Editor.

AMERICAN MEDICAL GOLFERS PLAY IN KANSAS CITY, MONDAY, MAY 11th

The American Medical Golfing Association will hold its twenty-second annual tournament at the Mission Hills Country Club and the Kansas City Country Club in Kansas City on Monday, May 11, 1936.

To accommodate comfortably the large entry which is anticipated, the Kansas City Committee has arranged play over two very fine courses which touch corners: the Mission Hills Country Club and the Kansas City Country Club. Their club houses are only one mile apart and ample transportation between the two has been arranged. Dinner for all players will be served in the Mission Hills Club House.

Seventy Trophies and Prizes

Thirty-six holes of golf will be played in competition for the seventy trophies and prizes in the nine events. Trophies will be awarded for the Association Championship, thirty-six holes gross, the Will Walter trophy; the Association Handicap Championship, thirty-six holes net, the Detroit trophy; the Championship Flight, first gross, thirty-six holes, the St. Louis trophy; the Championship Flight, first net, thirty-six holes, the President's trophy; the Eighteen Hole Championship, the Golden State trophy; the Eighteen Hole Handicap Championship, the Ben Thomas trophy; the Maturity Event, limited to Fellows over sixty years of age, the Minneapolis trophy; the Oldguard Championship, limited to competition of past presidents, the Wendell Phillips trophy; and the Kickers Handicap, the Wisconsin trophy. Other events and prizes will be announced at the first tee.

1150 A.M.G.A. Members in Every State in the Union

Dr. M. M. Cullom of Nashville, Tennessee, is president and Dr. W. Albert Cook of Tulsa, Oklahoma, and Dr. Walt P. Conaway of Atlantic City are vice-presidents of the American Medical Golfing Association, which was organized in 1915 by Dr. Will Walter, Dr. Wendell Phillips and Dr. Gene Lewis, and now totals 1,150 members representing every state in the union. The living past presidents include Dr. Thomas Hubbard of Toledo, Dr. Fred Bailey of St. Louis, Dr. Edward Martin of Media, Pa., Dr. Robert Moss of LaGrange, Texas, Dr. Charlton Wallace of New York, Dr. Will Walter of Chicago and Charlottesville, Va., Dr. James Eaves of Oakland, Calif., Dr. Chester Brown of Danbury, Conn., Dr. Samuel Childs of Denver, Dr. W. D. Shelden of Rochester, Minn., Dr. Walter Schaller of San Francisco, Dr. Edwin Zabriskie of New York, Dr. Frank A. Kelly of Detroit, Dr. John Welsh Croskey of Philadelphia, Dr. Homer K. Nicoll of Chicago, and Dr. Charles Lukens of Toledo.

Kansas City Golf Committee

The Kansas City Committee is under the general chairmanship of Dr. Clarence Capell, Rialto Building, Kansas City, Mo. He will be assisted by Drs. A. W. McAlester, Jr., Logan Clendenning, and A. C. Griffith, on entertainment; Drs. A. E. Jones, E. R. DeWeese, C. A. McGuire, D. A. Williams, Cliff Mullen, Lewis Allen, and Harold Roberts, on prizes; Dr. A. S. Welch on publicity; Drs. T. A. Kyner, J. S. Snyder, Clarence Sanders, on transportation; Drs. C. D. Cantrell and J. Q. Chambers, on scoring; Drs. Chas. C. Dennis and Kip Robinson, on starting.

Application for Membership

All male Fellows of the American Medical Association are eligible and cordially invited to become members of the A.M.G.A. Write the Executive Secretary, Bill Burns, 2020 Olds Tower, Lansing, Michigan, for an application blank. Participants in the A.M.G.A Tournament are required to furnish their home club handicap, signed by the secretary. No handicap over thirty allowed, except in the Kickers' (Blind Bogey). Only active members of the A.M.G.A. may compete for prizes. No trophy is awarded a Fellow who is absent from the annual dinner.

The twenty-second tournament of the American Medical Golfing Association promises to be a happy affair. The officers anticipate that some two hundred medical golfers from all parts of the United States will play in Kansas City on May 11th.

Annual Meeting of Association on Mental Deficiency Scheduled for May 1 to 4

The American Association on Mental Deficiency composed of some five hundred educators, psychologists, sociologists, and psychiatrists, is holding its sixtieth annual meeting at the Hotel Jefferson, St. Louis, Mo., on May 1, 2, 3 and 4. The Friday sessions will be devoted to General and Sociologic aspects of mental deficiency; the Saturday sessions to Psychological and Educational topics with special stress on Educational Disabilities. The Monday sessions will be given over to Research Activities, Medical Aspects and Administrative Problems in mental deficiency.

Some of the speakers are:

Popenoe on "Sterilization," Goddard on "Social Security," Hincks on "A National Program," Kirkbride on "Public Welfare," Hackbush on "Social Service," Vanuxem on "Education," Berry on "Teaching Techniques," Humphreys on "Research Problems," and many others.

Everyone interested in the mentally defective or retarded child is cordially invited to attend these sessions. The complete program may be obtained from the Secretary, Dr. Groves B. Smith, Godfrey, Illinois.

Conference on Rheumatic Diseases May 11th

The American Association for the Study and Control of Rheumatic diseases is holding its fifth conference on rheumatic diseases at the Phillips hotel, third floor, on May 11th at nine o'clock in Kansas City.

Paul C. Geissler Memorial Fund

A donation was received by the Tulsa County Medical Society to form the nucleus of an endowment fund for the library to provide books and journals on anesthesia. This will be called the Paul C. Geissler Memorial Fund.

Licensed to Practice Medicine During February, 1936

NAME	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Permanent or Present Address
Smith, Ralph Argyle	1909	Edina, Missouri	St. Louis Univ. Med.	1934	Oklahoma City, Okla.

ABSTRACTS : REVIEWS : COMMENTS *and* CORRESPONDENCE

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
717 North Robinson Street, Oklahoma City

The Role of the Iliotibial Band and Fascia Lata as a Factor in the Causation of Low-Back Disabilities and Sciatica. Frank R. Ober, M.D., Journal Bone and Joint Surgery, Vol. XVIII, No. 1, January, 1936.

The author directs attention to the pain along the course of the sciatic nerve which causes very distressing symptoms that are very difficult to relieve. He has made the observation that in cases in which arthrodesis has been done in the sacro-iliac joint, relief of symptoms often comes very quickly following the operation. He points out that this cannot be due to the bone immobilization of the sacro-iliac because relief comes long before the fusion of bone occurs. He also cites the case of a colleague who undertook to do a fusion on the sacro-iliac joint, but after making the wide Smith-Peterson incision no bone pathology was found and the wound was closed. Much to the surprise of the surgeon, the patient was relieved completely.

His conclusions are that relief of symptoms is probably due to releasing the fascial pull exerted through the fascia lata and its attachments to the gluteus maximus muscle. He cites the extensive attachments of the iliotibial band and fascia lata and shows that when there is a shortening of the iliotibial band and its fascial expansion there is an abduction contraction of the femur, resulting in a tremendous leverage action on the sacro-iliac and lumbo-sacral joints.

The sciatic nerve lies beneath the gluteus maximus and any contraction of the fascia lata must exert muscular pressure on this nerve. The symptoms in a person with contracted fasciae latae and iliotibial bands are those of pain in the lumbo-sacral and sacro-iliac joints. If there is a marked lumbar lordosis it is likely that there is pain in the dorsal region as well, or even in the cervicodorsal junction. There may be muscle spasm, limitation of motion and tenderness over the lumbo-sacral and sacro-iliac regions and posterior to and just below the greater trochanters, sciatic scoliosis, limitation of straight-leg raising, positive Ely's sign, and functional scoliosis if the abduction contracture is unilateral.

The method of eliciting the abduction sign is as follows: The patient lies on his side, with the thigh next to the table and flexed enough to obliterate any lumbar lordosis. The upper leg is flexed at a right angle at the knee. The examiner grasps the ankle lightly with one hand and steadies the patient's hip with the other. The upper leg is abducted widely and extended so that the thigh is in line with the body. If there is any abduction contracture, the leg will remain more or less passively abducted, depending upon the shortening of the iliotibial band.

The operation was described previously by Dr. Ober in the Journal American Medical Association, CIV, 1580, 1935. He makes an oblique incision and begins at a point a little lateral to the anterior iliac spine, extending downward and backward to a point about one inch posterior to and one inch above the greater trochanter, exposing the fascia lata. The iliotibial band and fascia lata are next incised posteriorly well over the anterior portion of the gluteus maximus muscle. The incision is then carried forward to a point just below the anterior-superior spine and includes the fascia surrounding the tensor fasciae latae. All intermuscular septa in this region are divided. The fascia is separated by blunt dissection until there is a gap of two inches.

In quoting the results since May 2, 1934, the author and his associates have operated upon forty-two patients. The left side was affected in fourteen cases and the right in twelve, making a total of twenty-six cases of unilateral involvement. There was bilateral involvement in sixteen cases. In a few there has been relief at operation. In most cases the relief from pain in the sciatic nerve began from the fifth to the tenth day after operation. A few cases had marked diminution of sciatic pain, but slight twinges have persisted. There was one case of moderate recurrence ten weeks after operation, following a two-day motor ride of 1,000 miles.

The lame back clears up from six weeks to six or eight months, usually. The motions of the spine return to normal and the sciatic scoliosis disappears. Patients with lordotic or flat lumbo-sacral angles improve so that nearly a normal lumbar lordosis results. Posture improves, the increased compensatory curves decrease, and pain at the root of the neck disappears.

Evolution Clinica de Los Injertos Oseos (Clinical Evolution of Bone Grafts). Alberto Inclan. Cir. Ortop. y Traumatol, III, 161, 1935.

After studying the clinical development of the bone graft in some hundreds of cases, Dr. Inclan gives his opinion with reference to the total or partial vitality of bone grafts, stating that the fate of such a graft depends on the biological purposes for which it is used and where it is implanted. When these purposes have been accomplished, the graft as such disappears and is replaced by newly formed bone which varies in structure according to the physiological demands of statics and dynamics, governed by the laws of Wolff. He states that the bone graft must first become united to the bone and must keep its integrity until the changes which result from its presence have been completely accomplished.

The author then presents a clinical and roentgenographic study of the development of bone grafts in cases of delayed union and psuedarthrosis of fractures, fixation of tuberculous joints, fusion of the spine, stabilization of joints, etc. From this study, the following conclusions are drawn:

1. When a bone graft is employed for fixation

of a fracture in a case of delayed union, the graft will disappear after union is complete.

2. When a bone graft is used for fixation of a fracture and in order to fill the gap between the fragments, the graft changes in structure until it attains the size and shape necessary to compensate for the deficiency.

3. If a bone graft is used for extra-articular arthrodesis of the joints, the integrity of the graft is indispensable and should be maintained until the lesion is healed. Pregression of the lesion without protection of the bone graft may produce loss of integrity of the graft.

4. When a bone graft is used for stabilizing dislocated or relaxed joints, the structure will change according to the role which it is to play. If its purpose is not accomplished, the graft will disappear either partly or entirely.

5. When a bone graft is employed with the object of replacing a large portion of bone, its fixation and osteotrophic action depends upon complete preservation of the graft until the newly formed bone takes on the normal structure; then the bone graft will disappear entirely.

INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building, Tulsa; Hugh Jeter, M.D., 1200 North Walker, Oklahoma City

By C. E. BRADLEY, M.D.

Purpura in Children. Carroll M. Pounders, M.D., F.A.C.P., Oklahoma City, Okla. Southern Medical Journal, March, 1935, Vol. 29, No. 3, Pages 317-23.

The author discusses the history and nature of purpura, points out the characteristic clinical picture, and calls special attention to the fact that the disease is easily identified by proper laboratory procedures. The hemoglobin and red blood cell values are not reduced below normal except in case of hemorrhage; there may or may not be some degree of leukopenia; but the blood platlet count is definitely reduced, usually below 100,000 and often below 60,000. The coagulation time may be normal, but the bleeding time is usually prolonged. The clot does not retract from the test tube.

The author calls particular attention to the fact that many of the commonly advocated therapeutic measures for the relief of purpura such as blood transfusion, calcium therapy, high protein diet, vitamin therapy, ultra-violet ray, iron, antivenin, autolyzed liver, stomach mucosa, epiniephrine, nonspecific protein therapy, and thromboplastin gave only transitory relief in the cases which he presents (with one exception, one acute case was relieved by transfusion and the intra-venous administration of antivenin), and were beneficial only in so far as they made up deficiencies of the individual patient or prolonged the life of the patient until splenectomy could be performed.

He suggests that splenectomy should be carried out in acute cases that have been carried over by transfusions, and in whom clinical signs and blood picture do not indicate that recovery is taking place, and in all chronic cases whether there is splenic enlargement or not. Of course, it is contraindicated until careful blood study has definitely established the diagnosis, and it is certainly contraindicated when there is a persistent leukopenia with low reticulocyte count.

Brief summaries of thirteen cases of purpura in children observed in the Crippled Children's Hospital of Oklahoma City are presented. Six of the cases were of the chronic type. In one of these splenectomy was performed and the results seemed quite successful, but the child succumbed to pneumonia three days after the operation. Another of these patients planned to return at a later date for splenectomy. Two of the cases presented were not cases of primary thrombocytopenic purpura and were presented merely to illustrate the type of purpura which may develop secondary to infection. Four cases of acute purpura were presented; in one case the patient was completely cured by transfusions and the intravenous administration of antivenin; and in another splenectomy brought complete relief.

Although the author does not feel that present knowledge of purpura hemorrhagica and the lasting and general effect which splenectomy has upon it justifies the opinion that it is a definite cure, he does feel that the almost uniformly good results which have followed splenectomy justify the continued use of this procedure.

The Use of a Blood Coagulant Extract From the Human Placenta in the Treatment of Hemophilia. R. Cannon Eley, M.D., Arda Alden Green, M.D., and Charles F. McKhann, M.D., with the assistance of Israel Kapynick and Harriet F. Coady, Boston, Mass. The Journal of Pediatrics, February, 1936, Vol. 8, No. 2, Page 135.

The authors present a study of the effect of human placental extract on the clotting time of normal blood in vitro and in vivo, and on the blood of individuals suffering from hemophilia.

The preparation of the extract from the placentas of non-syphilitic and non-toxic mothers is described. They found the extract to be sensitive to heat, oxidation and aging. An extract which would clot in five minutes a plasma which would normally clot in thirty minutes was considered sufficiently potent for use.

The experiments showed that the extract shortened the coagulation time of fresh citrated human or bovine blood even in dilutions as high as 1:10,000. The clotting time of the venous and capillary blood of rabbits was found to be shortened by the extract for the period of forty-eight to seventy-two hours. Intravenous injections of the extract proved fatal to the laboratory animals, but small doses given intramuscularly, subcutaneously, or intraperitoneally were not lethal but shortened the coagulation time of both capillary and venous blood for variable periods.

The extract (five c.c. given orally) reduced the clotting time of a normal individual's venous blood from six and one-half to one and one-half minutes in thirty minutes, and the clotting time of capillary blood from two and one-half to one and one-half minutes. At the end of five hours the clotting time had returned to normal. This indicated that the effect of the extract was the same as Mills had observed the administration of bovine lung extract to be.

The authors present a series of fifteen cases suffering from hemophilia who were treated with extracts from human placenta. The extract was given after fasting to lessen the effect of digestive enzymes on the extract, and they found that the extract was more easily absorbed when it was given in sodium bicarbonate or alkaline carbonated water than in ordinary ice water.

The intramuscular injection of sterile solutions

of the extract gave no ill effects, although it was not given unless unsuccessful results were obtained from the oral administration of the extract, and then great care was exercised to avoid intravenous injection. Older children have been found more resistant to the oral administration of the extract than younger children.

The effects of the extract when given orally were demonstratable in twenty to thirty minutes while the effect of the extract administered intramuscularly was not demonstratable for several hours.

Eleven of the series of fifteen children with hemophilia showed a satisfactory response to the extract as their respective coagulation times were reduced so they came within the maximum normal limit of ten minutes. Although in the other four cases there was some reduction in the coagulation values, the end point was not sufficiently low for the authors to consider the treatment satisfactory.

The authors present two cases in detail showing that these children were able to lead normal, fairly active lives while receiving the extract, while previously their activities were very limited due to the ease with which hematomas and hemarthrosis from trauma occurred, and that the extract could be taken without detriment over long periods of time. However, they suggest that a much larger series of cases will have to be studied before any definite conclusions can be drawn.

The authors also demonstrated the beneficial effect of local applications of the extract in controlling hemorrhage.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

Diagnosis and Treatment of Anisophoria. Jonas S. Friedenwald, M.D., Baltimore. Archives of Ophthalmology, February, 1936.

The importance of anisophoria is emphasized in this article. His method of measurement is given. There is a discussion of the physiologic horizontal, vertical and tortional anisophoria. This is followed by a description of pathologic anisophoria with the three optical methods used for its correction. There are four cases reported in which anisophoria resulted from the correction of the anisometropia. These are given at some length and quite detailed. Critical discussions follow the article by Dr. Walter B. Lancaster, Boston; Dr. F. H. Adler, Philadelphia; and Dr. Conrad Berens, New York.

The author's summary and conclusions are: Anisophoria is defined as that form of heterophoria in which the degree of muscular imbalance varies with the direction of gaze. Methods for the detection and measurement of anisophoria are outlined. Anisophoria may be produced by the correction of anisometropia with ordinary spectacle lenses. In these cases it is due to the unequal prismatic action of the peripheral portions of the lenses. Anisophoria may also result from the unequal action of the extra-ocular muscles. In such cases it is usually associated with some heterophoria on direct gaze. The various types of anisophoria produced by the more common forms of rotational inequalities of the eyes are discussed. The physiologic rotational inequalities of the eyes are also discussed, and some relations between these and the pathologic forms of anisophoria are pointed out. Three methods for the correction of anisophoria are described: the use of segments of prisms; the displacement of reading matter toward the side of the eye whch has the greater rotational amplitude, and the magnification of the image for the eye which has the greater rotational amplitude. A rough method for the computation of such magnifying lenses is outlined, and the need in some cases for meridional magnification rather than overall magnification is pointed out. The relative merits and limitations of these three methods for the correction of anisophoria are discussed, and a few illustrative cases are reported showing the third type of correction.

Unusually Severe Pyaemia Following Bi-Lateral Acute Otitis Media: Recovery. L. Hoffman. A. R. Tweedie. Abstracts of Proceedings of the Austrian Otological Society. Published in The Journal of Laryngology and Otology, September, 1935.

In a boy aged nine and a half years, following a sore throat, an acute otitis media occurred on both sides, with a spontaneous perforation at the commencement of November, 1933, and continued until November 20th, 1933, when the condition was associated with a high fever. After an afebrile interval of four days, as the temperature again rose and was accompanied by frequent vomiting, the child was admitted to hospital on November 25th, 1933.

Examination: General picture of severe septic infection with icterus, temperature thirty-six to forty-one degrees C.; enlargement of the spleen and liver. Culturable haemolytic streptococci in the blood. As other sources of infection could be excluded the cause was attributed to the aural condition, which showed profuse bilateral otorrhoea with central perforation of the membranes, but without any oedema of the meatal walls or the post-aural region and no local pain or tenderness. November 30th, 1933. Operation.—Right ear: Purulent mastoid content under pressure. Sinus found lying unusually far forward. Bone chiefly sclerotic and cellular only in the retro-facial area. The antrum was very deep and difficult to discover, but contained only a slight amount of secretion. Puncture of the sinus revealed normal fluid content.

Left ear: Only a small amount of free pus was found. Sinus in almost normal position.

The following day the child had improved, but on December 2nd a painful swelling occurred on the dorsum of the right foot, and as this was an obvious metastasis, and as the right ear was so definitely the chief offender, the right internal jugular vein was ligatured. The temperature rose again that same evening to forty degrees C., accompanied by a rigor. On December 5th a very painful septic infection occurred in the left hip joint, but the general condition of the child improved.

On December 9th to 14th, 1933, the temperature varied from thirty-seven to forty-one degrees C. with rigors, and did not respond to treatment with Omnadin, Detoxin, injections of the child's own blood, or Cardiazol-Chinin. An attempt was made to control the pain with Pyramidon and Pantopon. In addition, a blood transfusion of three hundred c.cm. was given.

December 22nd, 1933: The swelling on the right foot was now ready for incision and a large amount of pus was evacuated; seven days later an abscess in the left hip joint was also incised. At this time pneumonia occurred and lasted for about a fortnight.

January 10th, 1934: As the condition did not

improve, the child was treated with streptococcal serum and later was also given on three occasions an intra-muscular injection of ten c.cm. of his mother's blood. No response, however, occurred to any form of treatment, and on January 13th, 1934, another metastatic abscess was opened, in the right shoulder joint.

The next five months demanded very considerable and continuous attention to the various abscesses, but the general condition of the child gradually improved and he was able to be discharged for further observation on June 8th, 1934.

Water-Binding of the Retina. J. A. van Heuven and F. P. Fischer, University Ophthalmic Clinic, Utrecht. The British Journal of Ophthalmology, July, 1935.

This interesting and lengthy article is summarized by the authors as follows:

Methods are described by which the water-binding can be defined and it is explained that water-binding, the capacity, the intensity and the nature of the water-binding must be distinguished theoretically and practically. As similar researches had already been carried out on the cornea, the sclera, the uvea and the lens, a comparison between the retina and these tissues was possible.

The retina is a swelling gallert with a not unimportant capacity of water-binding. This capacity is much smaller than that of the cornea, sclera, or uvea and larger than that of the lens.

The retina swells in water.

In acids, except in phosphoric acid, the swelling of the retina is checked. This is more marked in concentrated acid, but the action of equinormal acids varies.

Alkalies promote swelling of the retina. This swelling is all the greater in proportion as the alkalies are more concentrated, equinormal alkalies again act variously in strength.

In equally dissociated acids and alkalies the swelling is variable. By salts the swelling of the retina is checked and more strongly in proportion as the salt-solutions are more concentrated.

The action of equimolar salt-solutions is variable. By an electrolyte the swelling of the retina is influenced in the same way as by salts.

The rate of swelling of the retina is less than that of any other tissue of the globe.

The change in density in swelling makes very regular progress in the retina and it proves that the retina undergoes a very regular contraction of volume in swelling. Further this is the case only in the lens. Thus the retina undergoes a relative shrivelling in swelling, whereas the uvea, especially the choroid, undergoes a relative swelling.

In the retina all the water is loosely bound, which is not the case in any other tissue of the globe.

The exsiccation-time of the retina is longer than that of all the other tissues of the globe. Regarding the tissues of the eye the exsiccation-time increases going in a direction from the outer walls to the inner parts.

The intensity of the water-binding of the retina is great, greater than its capacity, it is smaller than the intensity of the lens, and greater than that of the other tissues.

Primary Skin Graft in Modified (Bondy) Radical Mastoidectomy. George E. Shambaugh, Jr., M.D. Chicago. Archives of Otolaryngology, February, 1936. For the Preservation of Hearing in Cases of Genuine Cholesteatoma.

The Bondy type of modified radical mastoidectomy as recommended by Bondy, Wittmaack, Lillie and others is not new, but the author offers in addition to this procedure a primary skin graft which he claims shortens the time of healing. He reports two cases in which this was used in which dry, completely epitheliated cavities resulted in twenty-five and thirty-two days. This is applicable to cases in which there are present genuine cholesteatoma.

He reviews Whittmaack's classification which states that true cholesteatoma is a rare tumor in the cranial bones and is probably the result of an embryonic rest. Secondary cholesteatoma results from a necrotic otitis media usually following scarlet fever or measles; it is the extension of stratified squamous epithelium from the external auditory canal through a perforation into the middle ear; the perforation is usually large and marginal. Genuine cholesteatoma is an ingrowth of epithelium from Shrapnell's membrane without a pre-existing otitis media or perforation.

The method by which this genuine cholesteatoma is produced is discussed and also the subsequent effect on the hearing. It is pointed out that it is always important to preserve hearing when possible but that when the affected ear is the only one with which the patient is able to hear then it becomes of paramount interest both to the patient and the operator that the hearing not only be preserved but improved if possible.

Shambaugh says that with an attic cannula and seventy per cent alcohol the majority of the cases of genuine cholesteatoma can be rendered dry and inactive. If this fails to produce the desired results, then he resorts to surgery. The roentgenogram shows an area of diminished density in the region of the cholesteatoma. The operation is limited to the attic, aditus and antrum, leaving the tympanic cavity, the pars tensa and the ossicles undisturbed. The object of the operation is to attain that which the irrigations did not, i. e., an opening large enough to keep the cholesteatoma sac clean, dry and inactive.

A detailed description is given of the operation. A Thiersch skin graft one-half inch in thickness is used and it is applied with Mosher's paraffin basket mold.

The primary skin graft in addition to shortening the healing period, prevents the formation of granulations which is an aid to the preservation of hearing. Drawings and audiograms accompany the article.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Calcified Nucleus Pulposus. Clinical, Radiograpnic and Radiotherapeutic Considerations (Nucleus Pulposus Calcifie Considerations Cliniques, Radiographiques et Radiotherapiques). By J. E. Gendreau, Albert Jutras and O. Dufresne, University of Montreal. L'Union Medicale du Canada, March, 1936.

A discussion of calcification of the nucleus pulposus is prefaced by a report of a case which is

apropos, and, at the same time, quite spectacular. It follows:

A married woman, multipara, thirty-four years of age, was seen at the Radium Institute (Institut du Radium) November 26, 1935. She came because of sudden severe spontaneous pain in left lumbar region twelve days before. No history of injury, immediate or remote, but there was a history of vague distress in the lower back, accentuated by work and walking, for about two years. At the very beginning of the attack twelve days before, all movements of the body were impeded. Even movements of the head caused pain. She took to bed at once.

The spontaneous pain was limited to a circumscribed area near the dorso-lumbar region, but any interference with vertebral static would provoke an exacerbation. The erector spinae muscular masses were tense, but neither pressure nor percussion directly over the vertebral spines produced a painful response.

A radiographic examination disclosed two small opaque spots symetrically placed in the interval between the tenth and eleventh dorsal bodies. Each little body was only a few millimeters in diameter, shaped somewhat like a lentil, and each was distinctly separated from the vertebral bodies above and below. The diagnosis was calcareous intervertebral chondritis, or calcified nucleus pulposus.

Reference is made to the very recent description of the affection, the authors stating that the oldest, as well as the first contribution was made by Calve and Galland in 1922. Six years later Schmorl made an anatomical study of the affections of the intervertebral discs.

It appears that calcification of the nucleus pulposus is very rare, only about thirty cases having been reported.

There is a short discussion of the anatomy of the intervertebral disc, emphasis being placed upon the elasticity of the nucleus pulposus, which is a vestige of the notochord; upon its central location in the disc, and especially upon its function in modifying the shocks between contiguous vertebral bodies. Calve speaks of the nucleus pulposus in this connection as an amortisseur.

No definite cause of calcification of the nucleus pulposus can be named, but it is indicated that, in general, calcium metabolism doubtless plays a role of importance. In addition, infections, dysfunction of endocrine glands, traumatisms may be obscure and inconstant etiological factors.

It would appear that the majority of patients are over forty years of age but there are exceptions. It would appear, too, that the discs in the segment of the spine between the ninth dorsal and the first lumbar are the usual sites, this being the segment of transition between the normal posterior prominence of the dorsal spine and the normal lardosis of the lumbar region.

The affection is not always characterized by pain. Some of the classified cases have been discovered in a routine radiographic examination of the spine in patients without much pain. However, pain is the leading complaint in most patients.

LeRoy Long.

The Occurrence and Significance of Decidual Changes of the Endometrium in Extrauterine Pregnancy. By R. S. Siddall, Detroit. The American Journal of Obstetrics and Gynecology, March, 1936, Pages 420 to 426.

This is a report of twenty-four cases of ectopic pregnancy in which diagnostic curettage showed the presence of decidua alone, and without chorionic elements, in sixteen cases.

"Decidua disappears some time subsequent to beginning ovular death, as manifested by vaginal bleeding and pain. Our series, however, and four others from the literature showed such a high incidence of decidua when abnormal bleeding had preceded by only a week, or less, that diagnostic curettage seems indicated for indefinite cases with hemorrhage of short duration. After more prolonged hemorrhage, decidua was reported infrequently in three of the series cited from the literature but was rather frequent in the fourth. It was seen in about one-half of our cases with protracted bleeding, and was actually or potentially of considerable value in differential diagnosis."

COMMENTS: The accurate diagnosis of extrauterine pregnancy is frequently so difficult that the knowledge and use of all means of differentiation is invaluable. It is recognized that diagnostic curettage is not by any means a positive criterion, but his work certainly indicates, as does one's experience, that the examination of uterine curettings may offer extremely valuable presumptive evidence if in keeping with the clinical picture.

Wendell Long.

The Effects of Radiation on the Human Offspring. By James R. Miller, James A. Corscaden and James A. Harrar, New York. The American Journal of Obstetrics and Gynecology, March, 1936, Pages 518 to 522.

This article is based upon the information obtained by questionnaires sent to the members of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons.

From this information they summarize: "It seems advisable to interrupt any pregnancy which has been subjected to therapeutic radiation, for it is generally admitted that serious radiation effects on the offspring will result in a high percentage of cases. These effects are proportional to the amount of radiation and are more serious in early pregnancies, though the fetus may be seriously injured in any stage of development."

They also feel it reasonable to advise that the use of radium and x-ray during pregnancy for treatment purposes be restricted to very clear and urgent indications.

The effect of radiation on offspring conceived subsequent to radiation therapy is distinctly another problem. In this group they distinguish between "early" and "late" conception. By "early" is meant conception in first few months after application of a temporary sterilizing dose. "Late" conception is that which takes place after the end of the temporary amenorrhea. It is the common view that injury is possible in the case of "early" conception whereas in "late" conception the ovum will recover completely before it is capable of being fertilized.

They urge that significant cases which show the effect of radiation on the human offspring be put upon record with sufficient data to make the report useful.

COMMENTS: With the use of radiation for the production of therapeutic abortion and for the production of temporary amenorrhea in cases of menorrhagia, this problem becomes a very vital one. The summary of information supplied in this paper is extremely valuable and it is hoped that the combined experience of all workers, none of whom have sufficient material to make unqualified conclusions, will be of assistance.

Wendell Long.

The Use of Corpus Luteum in the Treatment of Dysmenorrhea. By Ralph E. Campbell and Frederick L. Hisaw. The American Journal of Obstetrics and Gynecology, March, 1936, Pages 508 to 510.

This is a report of eleven patients with normal genital development and placement but dysmenorrhea, treated by a product of pure corpus luteum harmone designated as corporin by Hisaw. The rationale of the treatment of dysmenorrhea by a pure corpus luteum harmone is well known from a physiological standpoint. It has been shown in the experimental laboratories that estrogenic harmone causes the uterine irritability and painful contractions whereas the corpus luteum harmone is antagonistic to this action, becoming the quieting factor.

It is only recently that the biological researches of Hisaw and Corner have made the corpus luteum harmone available as a pure product. Most of the biological products heretofore marketed as corpus luteum have contained very little of this harmone as a pure substance.

As evidenced by this small series of cases, of which five are reported, "it is safe to conclude that corporin can be used in selected cases with excellent relief; and, corporin, like all other medical treatments, will have its absolute failures and its partial and complete successes."

COMMENTS: In the trying condition of dysmenorrhea, many remedies have been sought. Judging from the quieting effect of pure corpus luteal products upon the experimental animal uterus, much hope has been held that relief of this condition could be attained in human beings, providing a pure corpus luteal harmone product could be developed. In the past year such a harmone product has been found by Hisaw and Corner and this report, therefore, is a very interesting one.

It must be remembered, of course, in considering the subject of dysmenorrhea that associated pelvic pathology must be corrected and that the beneficial use of pure corpus luteal harmone for this condition will be limited to a selected group of patients. Wendell Long.

Effect of Progestin and Estrogenic Substance on Human Uterine Contractions: Value of Progestin in Treatment of Habitual and Threatened Abortion

Frederick H. Falls, Julius E. Lackner and Leon Krohn, Chicago (Journal A. M. A., January 25, 1936), treated thirty-four of forty-one cases of threatened and habitual abortion successfully with the corpus leteum hormone progestin. The authors observed that the normal response to the distended bag varied considerably in different individuals both in frequency and in intensity of the contractions. Following the administration of one cc. of solution of pituitary a marked tetany of the uterus appeared within from three to five minutes. This tetany continued for from five to ten minutes and was followed by regular rhythmic, vigorous contractions, which lasted for a variable length of time. During the time of the experiment the uterus usually failed to respond to a second dose of solution of pituitary. The effect of intramuscular injections of progestin in one rabbit unit doses (Corner) on normal contractions and those contractions of the uterus produced by solution of pituitary was studied. Normal uterine contractions were completely inhibited in the great majority of cases. The effect began to show itself in from five to ten minutes and lasted for the entire two or three hours during which tracings were recorded. In most instances the inhibitory effect obtained consisted of completely suspending all motility of the uterus. Solution of pituitary elicited but little or no response while the uterus was in a state of quiescence from progestin. If progestin was administered during a reaction produced by solution of pituitary, contractions disappeared in from ten to twenty minutes. Attempts to sensitize the uterus to solution of pituitary with esrogenic substance failed during the period in which the uterus was under the influence of progestin. Doses of 10,000, 20,000 and 40,000 rat units of the estrogenic substance Progynon-B (Schering) were administered intramuscularly after a satisfactory control of normal contractions had been recorded. No change in normal contractions was noted after 10,000 rat units had been administered. A dose of 20,000 rat units produced a moderate increase in intensity and frequency of the uterine contractions. A dose of 40,000 rat units produced a tetany of the uterus one hour after administration, which lasted for about ten minutes. This tetany was followed by regular, frequent, vigorous contractions of the uterus for the duration of the experiment. The hypodermic injection of one-fourth grain of morphine sulfate not only failed to diminish contractions of the human puerperal uterus produced by the injection of one cc. of solution of pituitary but actually seemed to augment them.

Congenital Syphilis: Results of Treatment in Children

According to Frank R. Smith, Jr., Baltimore (Journal A. M. A.., August 10, 1935), early congenital syphilis is curable. The start of treatment at an early age is an important factor, as is the amount of treatment given in the first year. It is safe to say that a baby whose treatment is started under six months of age has an eighty-four per cent chance of serologic as well as clinical cure, if fifty injections of drug are given before the age of two years. The incidence of relapse increases with the age at which the treatment is started and decreases with the amount of treatment. Syphilis per se, except when the nervous system is involved, is rarely a cause of death in children over six months of age or in infants younger than six months who have had more than one course of treatment. All clinical manifestations of congenital syphilis respond to antisyphilitic treatment except neurosyphilis, in which progression may occur in spite of it and even after the serologic reactions are negative.

Facial Erysipelas: Evaluation and Comparison of Specific Antiserum and Ultraviolet Therapy

H. Jerry Lavender and Leon Goldman, Cincinnati (Journal A. M. A., August 10, 1935), observed ninety cases of adult facial erysipelas from 1913 through the spring of 1935. Thirty-two of these cases were treated with specific antiserums with an average of 4.8 injections. Twenty-six patients were given intensive ultraviolet therapy with an average of 18.8 erythema doses at a treatment and an average of three treatments for each patient. Thirty-two cases were used as controls with simple wet dressings. The seasonal incidence, the lapse of time before the onset of treatment, the general condition or debilitation of the patient and the previous treatment are a few of the matters that play a marked role in the evaluation of the therapy instituted. Ultraviolet therapy is equal if not superior to serum therapy. The end results, governed by the quicker response to treatment and the fewer complications, make ultraviolet therapy for facial erysipelas distinctive and the method of choice.

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